

User Manual

ProfiTrace Plugin

for Profi-S-Bus

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Version (SW and Manual)
V1.0.0 First release

1 Installation

1.1 Requirements

The plug-in runs only with ProfiTrace version 1.6.1 upwards. Please ensure that you have installed at least this version on your PC.

The plug-in is composed of one file called ***plg_S-Bus.dll***

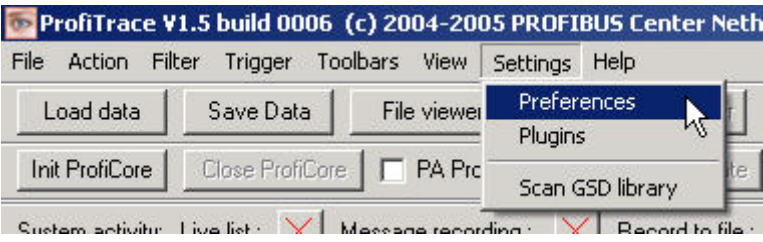
1.2 Installation

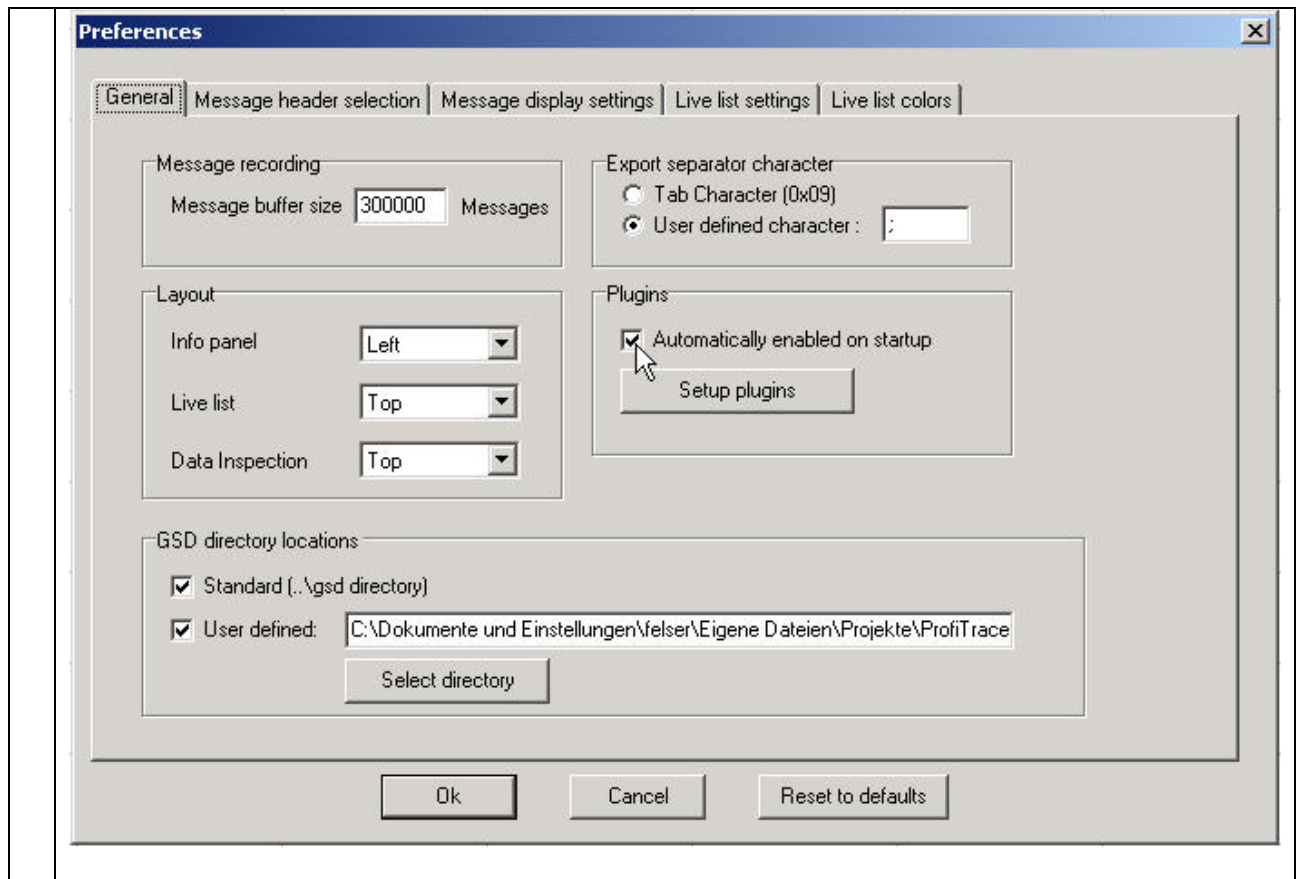
Copy the file ***plg_S-Bus.dll*** in the directory of the ProfiTrace plug-in. This directory is called normally

C:\Programme\ProfiTrace_V1_6_1\app\plugins

1.3 Setup

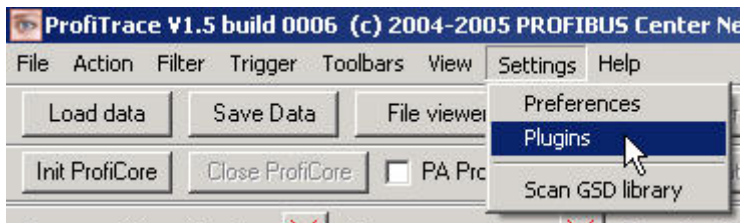
Start the ProfiTrace program and setup the plug-in:

1	<p>Open the <i>Preferences</i> in ProfiTrace</p> 
2	<p>Select the <i>Plugins</i> to <i>Automatically enabled on startup</i></p>



3 Restart your ProfiTrace

4 Open the **Plugins** menu



5 Ensure that:

- the Plugin is **Enabled**
- The **Info Panel** is enable to get interpretations on the Info Panel
- **Msg. Mem. Record.** is enabled to get decoding of reply messages
- The **General msg. info** is enabled to get hints on filtering on the Plugin outputs

Plugin info & settings X

Loaded plugins | Plugin initialisation log

Filename	Enabled	Vendor	Version	Description
plg_plugin.dll	Yes	Hochschule für Technik und Informatik	V0.1	SAIA S-Bus
plg_PROFIdrive.dll	Yes	Hochschule für Technik und Informatik	V0.1	PROFIdrive decoding

Plugin info & settings:

Enabled General setup

Capabilities:

Info Panel Enabled Setup

Message Scan Enabled Setup

Msg. Mem. record. Enabled Setup

General msg. info Enabled Setup

Description | General info | Supported Ident Nrs

Version: V0.1
 Build: 9
 Vendor: Hochschule für Technik und Informatik
 Division: PROFIBUS Kompetenzzentrum in Burgdorf
 Author: Max Felser
 Development tool: Microsoft visual C++ V6.0
 Plugin API version: V1.0

Close
Install plugin

6 No additional setups are possible in this version.

2 Measurements

2.1 Start

1 Start the measurement as normal

ProfiTrace V1.6.1 (c) 2004-2006 PROCENTEC "051205_1800.ptd"

File Action Filter Trigger Toolbars View Settings Help

Load data Save Data File viewer Setup record trigger Start message recording Stop message recording Set record filter Set view filter

Init ProfiCore Close ProfiCore PA Probe Auto-detect baudrate Set baudrate 187.5 kbps

System activity: Live list Message recording Record to file

Info Panel | Live list | Messages | Messages (with view filter applied) | Station statistics view | Data inspection

Framestructure: **SD2 message**
 Source address: **8**
 Destination address: **7**
 Frametype: **Request message**

Source SAP: **13 (0x0D)**
 Destination SAP: **39 (0x27)**

SAIA S-Bus interpretation
8 -> 7 S-Bus 34
REQ Read R 87 to 94

- Profi-S-Bus header
 Length (bytes): 14
 Version: 0
 Protocol type: 0
 Sequence: 5656
 - Telegram attribute: request (0)
 Destination: 34
 Command: Read Register (0x06)
 R-count: 7
 Base address: 87 (0x0057)

Setup Search | Search Up | Search Down

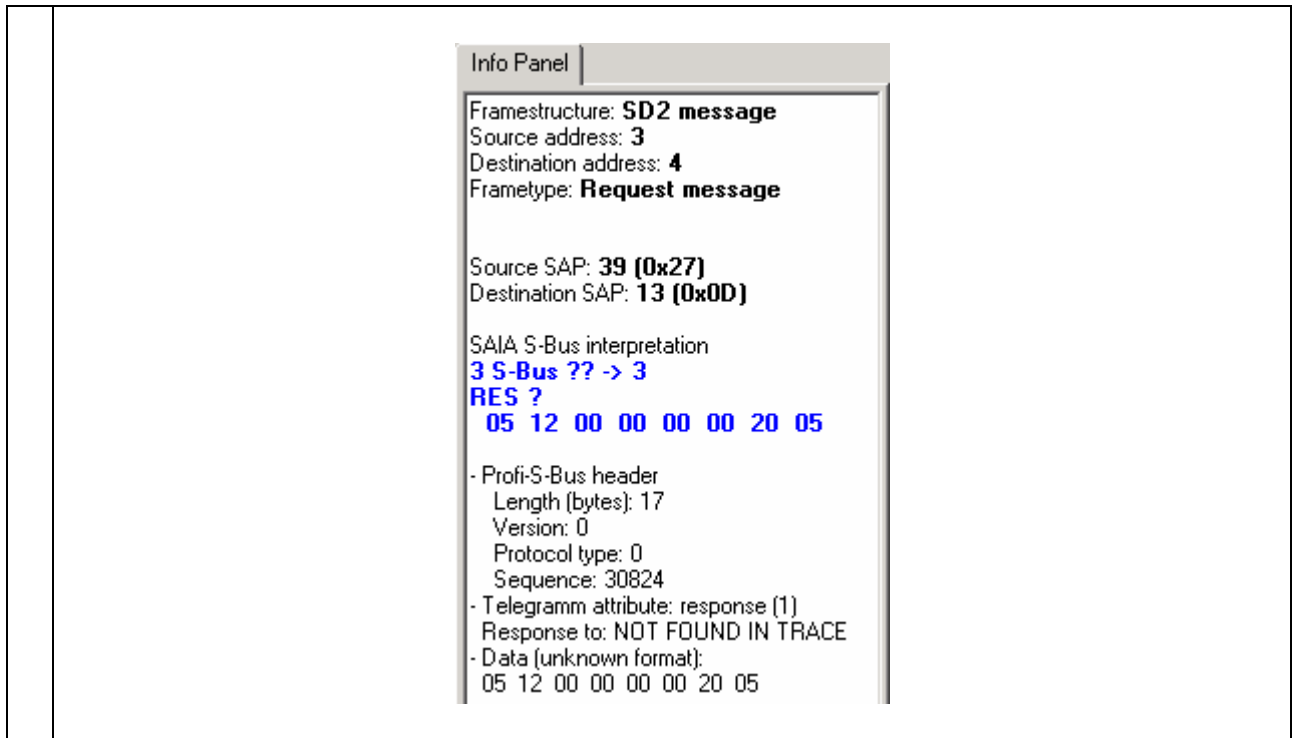
FrameNr	Timestamp	Attention	Frame	Addr	Service	Msg type	Req/Re
5581	1358375	Bit	SD2	7->8	SRD_HIGH		Req
5582	1358875	Bit	ACK			Short acknowledge	Res
5584	1359049	Bit	SD2	8->7	SRD_LOW		Req
5585	1359372	Bit	ACK			Short acknowledge	Res
5587	1359708	Bit	SD2	11->22	SRD_HIGH		Req
5588	1360036	Bit	ACK			Short acknowledge	Res
5593	1361983	Bit	SD2	22->11	SRD_LOW		Req
5594	1362306	Bit	ACK			Short acknowledge	Res
5598	1363027	Bit	SD2	7->8	SRD_HIGH		Req
5599	1363659	Bit	ACK			Short acknowledge	Res
5602	1364094	Bit	SD2	11->22	SRD_HIGH		Req
5603	1364425	Bit	ACK			Short acknowledge	Res
5608	1366372	Bit	SD2	22->11	SRD_LOW		Req
5609	1366696	Bit	ACK			Short acknowledge	Res
5614	1367525	Bit	SD2	8->7	SRD_LOW		Req
5615	1367848	Bit	ACK			Short acknowledge	Res
5617	1368185	Bit	SD2	11->22	SRD_HIGH		Req
5618	1368510	Bit	ACK			Short acknowledge	Res

	<p>with:</p> <ul style="list-style-type: none"> - Init ProfiCore - Start Message Recording - Stop message Recording <p>Or Load data from a recorded file</p> <p>and select the Messages display</p>
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2.2 Interpretation

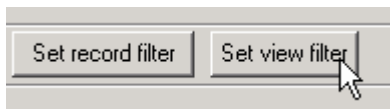
1	<p>The Info Panel shows the SAIA-S-Bus interpretation, if the frame is recognised as such</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Info Panel</p> <p>Framestructure: SD2 message Source address: 8 Destination address: 7 Frametype: Request message</p> <p>Source SAP: 13 (0x0D) Destination SAP: 39 (0x27)</p> <p>SAIA S-Bus interpretation 8 -> 7 S-Bus 34 REQ Read R 87 to 94</p> <p>- Profi-S-Bus header Length (bytes): 14 Version: 0 Protocol type: 0 Sequence: 5656</p> <p>- Telegramm attribute: request (0) Destination: 34 Command: Read Register (0x06) R-count: 7 Base address: 87 (0x0057)</p> </div> <p>Remark: The frames are interpreted as SAIA-S-Bus frames if the SAPs are <40, the data length is >10 and equal to the fourth data byte (and the first three data bytes are 0).</p>
	<p>Hint: You may use a filter (SD=2)AND(LEN=DATA[3]) to select SAIA-S-Bus frames.</p>
2	<p>If there is a request found with the same sequence number, addresses and SAPs as the reply, the content of the reply is interpreted and displayed.</p>

	<div data-bbox="624 165 1059 1048" style="border: 1px solid black; padding: 5px;"> <p>Info Panel</p> <p>Framestructure: SD2 message Source address: 11 Destination address: 22 Frame type: Request message</p> <p>Source SAP: 39 (0x27) Destination SAP: 13 (0x0D)</p> <p>SALA S-Bus interpretation 11 S-Bus 152 -> 11 RES Read F 32 to 63 11111100 (0xFC) 00000111 (0x07) 11111000 (0xF8) 00000001 (0x01)</p> <ul style="list-style-type: none"> - Profi-S-Bus header <ul style="list-style-type: none"> Length (bytes): 13 Version: 0 Protocol type: 0 Sequence: 5936 - Telegramm attribute: response (1) FrameNr. of request: 5576 Sequence of request: 5936 Response to: Read Flag - Data: <ul style="list-style-type: none"> Binary data: 11111100 (0xFC) Binary data: 00000111 (0x07) Binary data: 11111000 (0xF8) Binary data: 00000001 (0x01) </div>
<p>3</p>	<p>If a frame is repeated the second occurrence of the request or reply is marked with an error indication.</p> <div data-bbox="624 1155 1059 1899" style="border: 1px solid black; padding: 5px;"> <p>Info Panel</p> <p>Framestructure: SD2 message Source address: 4 Destination address: 3 Frame type: Request message</p> <p>Source SAP: 13 (0x0D) Destination SAP: 39 (0x27)</p> <p>SALA S-Bus interpretation 4 -> 3 S-Bus 32 REQ Read R 81 to 85</p> <p>ERROR: Repeated request of 1. FrameNr: 5695</p> <ul style="list-style-type: none"> - Profi-S-Bus header <ul style="list-style-type: none"> Length (bytes): 14 Version: 0 Protocol type: 0 Sequence: 30886 - Telegramm attribute: request (0) Destination: 32 Command: Read Register (0x06) R-count: 4 Base address: 81 (0x0051) </div>
<p>4</p>	<p>If the request for a reply is not found in the list of traced messages (or the message registration is not switched on in the plug-in), there is not possible to get an interpretation of the data content on reply messages. The data is presented in Hex values.</p>

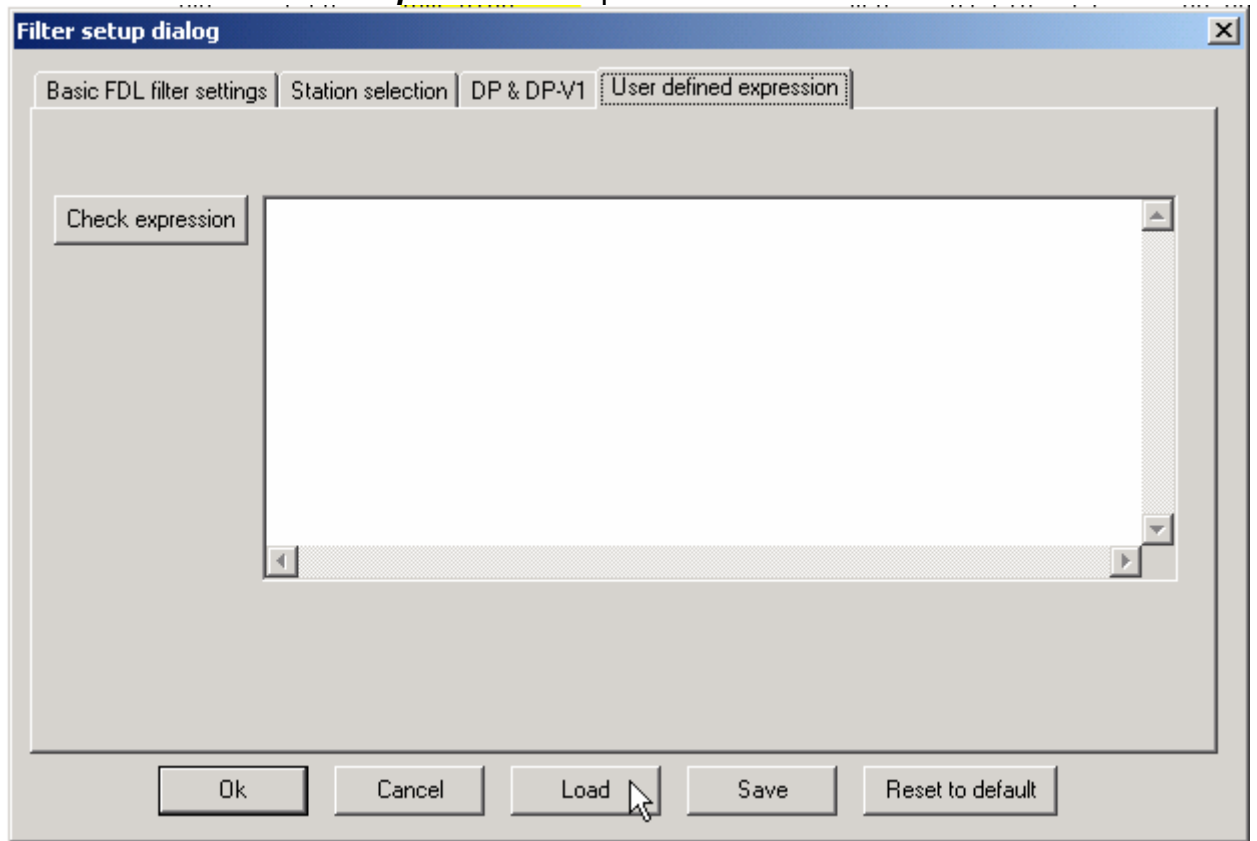


2.3 Predefined Filters

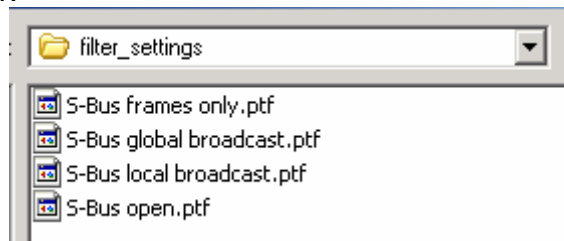
- 1 With the plug in there is a set of filters for ProfiTrace available. Copy these files into the directory:
C:\Programme\ProfiTrace_V1_6_1\filter_setting
 and
C:\Programme\ProfiTrace_V1_6_1\search_setting
- 2 If you want to filter your trace on S-Bus frames only open the **Set view filter** menu



3 Select the **User defined expression** and press the **Load** button

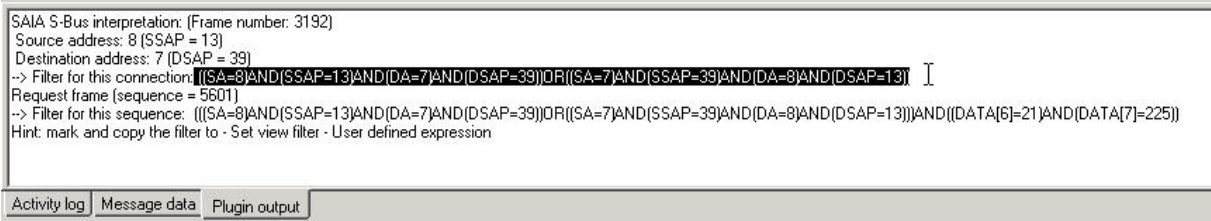

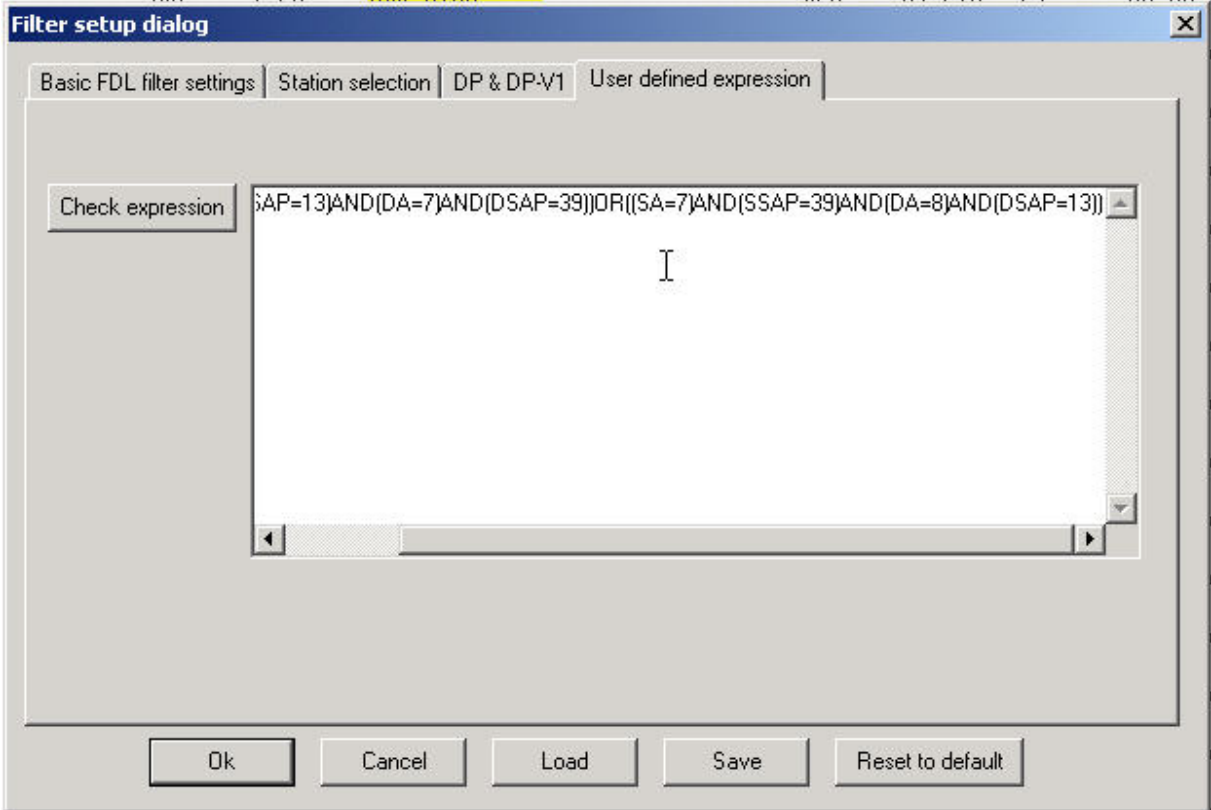


4 Select the required filter:



5 **Hint:**
The same definitions may also be used for the search function in ProfiTrace

2.4 Filter on connections

1	<p>Two filters are proposed on request and reply messages:</p> <ul style="list-style-type: none"> - filter the connection with this addresses and SAPs - filter all frames of this sequence number (including repetitions) <p>Select the filter description on the Plug-in output window and cut it (e.g. with ctrl-C)</p>  <p>The screenshot shows the 'Plugin output' tab with the following text:</p> <pre> SALA S-Bus interpretation: (Frame number: 3192) Source address: 8 (SSAP = 13) Destination address: 7 (DSAP = 39) -> Filter for this connection: ((SA=8)AND(SSAP=13)AND(DA=7)AND(DSAP=39))OR((SA=7)AND(SSAP=39)AND(DA=8)AND(DSAP=13)) Request frame (sequence = 5601) -> Filter for this sequence: (((SA=8)AND(SSAP=13)AND(DA=7)AND(DSAP=39))OR((SA=7)AND(SSAP=39)AND(DA=8)AND(DSAP=13)))AND((DATA[6]=21)AND(DATA[7]=225)) Hint: mark and copy the filter to - Set view filter - User defined expression </pre>
2	<p>Open the Set view filter menu</p>  <p>The screenshot shows two buttons: 'Set record filter' and 'Set view filter'. A mouse cursor is clicking on the 'Set view filter' button.</p>
3	<p>and past the filter description in the User defined expression tab</p>  <p>The screenshot shows the 'Filter setup dialog' window with the 'User defined expression' tab selected. The text area contains the filter expression:</p> <pre> ((SA=8)AND(SSAP=13)AND(DA=7)AND(DSAP=39))OR((SA=7)AND(SSAP=39)AND(DA=8)AND(DSAP=13)) </pre> <p>Buttons at the bottom include 'Ok', 'Cancel', 'Load', 'Save', and 'Reset to default'.</p> <p>and terminate with Ok</p>
4	<p>and you see only frames of the selected connection in this trace</p>

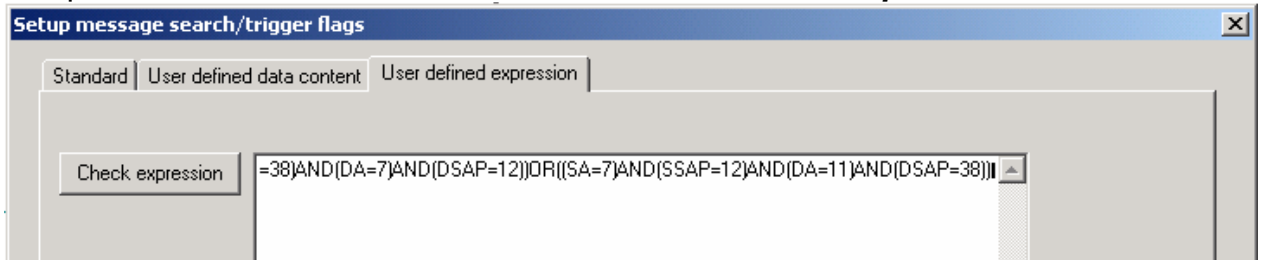
FrameNr	Timestamp	Attention	Frame	Addr	Service	Msg type	Req/Res	SAPS	Datalen	Data
3189	782348	Bit	SD2	7->8	SRD_HIGH		Req	39->13	29	00 00 00 1D 00 00 15 E1 01 00
3192	783020	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E1 00 22
3208	787142	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E2 00 22
3222	791645	Bit	SD2	7->8	SRD_HIGH		Req	39->13	29	00 00 00 1D 00 00 15 E1 01 00
3234	794953	Bit	SD2	7->8	SRD_HIGH		Req	39->13	41	00 00 00 29 00 00 15 E2 01 00
3251	799404	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E3 00 22
3266	803241	Bit	SD2	7->8	SRD_HIGH		Req	39->13	13	00 00 00 0D 00 00 15 E3 01 00
3396	831037	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E4 00 22
3408	833464	Bit	SD2	7->8	SRD_HIGH		Req	39->13	13	00 00 00 0D 00 00 15 E4 01 EC
3411	833957	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E4 00 22
3422	837042	Bit	SD2	7->8	SRD_HIGH		Req	39->13	13	00 00 00 0D 00 00 15 E4 01 EC
3425	837541	Bit	SD2	8->7	SRD_LOW		Req	13->39	14	00 00 00 0E 00 00 15 E5 00 22
3436	840636	Bit	SD2	7->8	SRD_HIGH		Req	39->13	13	00 00 00 0D 00 00 15 E5 01 0F

5 You can do the same for a sequence or specify a filter for recording only one connection.

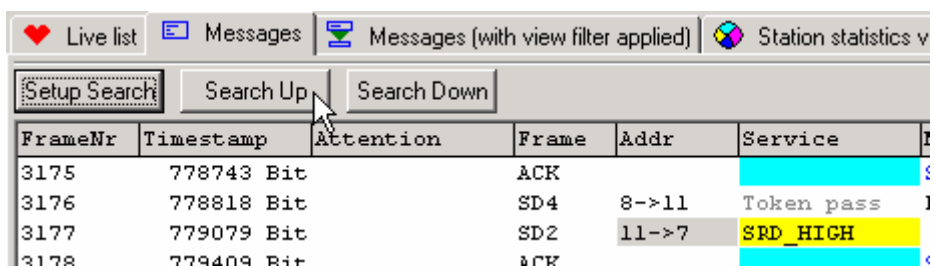
6 You may use the filter expression also to search in the unfiltered data stream for the next frame of the same connection. First **Setup search**



and paste the filter of the connection into the **User defined expression**



Search up or **Search down** to find the next frame of the same connection in the recorded data.



Hint:

Store the used defined filters or search string in a file. You can retrieve it in the next measurement quick and easy.

3 Limitations

Only the values of registers, timers, counters and binary values of inputs, outputs and flags are interpreted. For all other Profi-S-Bus frames the meaning is indicated but the content is not interpreted.

The trace buffer for requests is limited to 64'000 request frames. This is typically enough for a trace buffer of 300'000 frames. If this limit overflows the request frames are ignored and no interpretation of replies is possible.