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1 RS_LogAndTrace

1.1 Specification Item RS_LT_00001

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The LT module shall be a BSW module. It shall receive log and trace messages from several sources, like Applications, some BSW modules and the RTE. These messages may be transmitted over a communication interface to an external client.
Rationale:	Each Tier1 uses its own mechanisms to provide such a logging interface, using some internal or external debugging interfaces. The format of the logging content also differs from ECU to ECU. When testing several ECU's, many different tools and parsers are needed to get the right information out of the logs. A standard Diagnostic Logging Component with standardized logging content may help to reduce the testing efforts and enable new automated testing mechanisms. Also the number of tools could be reduced by a standard logging content and protocol.
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.2 Specification Item RS_LT_00002

Trace References:

RS_MAIN_00260, RS_MAIN_00420

Content:

Type:	Valid
Description:	A specified format shall be defined, which covers all requirements of log and trace. Some examples of the information stored in a log or trace message are the source, the context and the timestamp of the message to be able to filter the log and trace messages.
Rationale:	Since logging and tracing is an important mechanism for testability and proofing product quality, it is necessary to standardize the transmitted and stored data format. This is important for archiving, comparing and analyzing of log or trace messages. Also it may be possible to build common tools to interpret the incoming data.
AppliesTo:	FO
Use Case:	
Supporting Material:	see [REF] https://svn2.autosar.org/repos2/09_Work Packages/13_WPII-1.1.3/01_Deliverables/AUTOSAR_Concept_DLT.ppt

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
 –Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.3 Specification Item RS_LT_00003

Trace References:

RS_BRF_02144 MAIN_00260, RS_BRF_01440 MAIN_00420, RS_MAIN_00260,
RS_MAIN_00011

Content:

Type:	Valid
Description:	LT shall offer a generic interface for Applications independent from the type of log and trace message.
Rationale:	To reduce the amount of interfaces a generic and message independent interface may be implemented.
AppliesTo:	FO
Use Case:	
Supporting Material:	see [REF]

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.4 Specification Item RS_LT_00004**Trace References:**

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	Application shall be aware of its log levels and trace status in order not to generate unnecessary log and trace messages. Log level and trace status should be checked by the Applications before sending the messages.
Rationale:	The generation of unnecessary load on the communication interface and for the system has to be avoided. The LT shall provide information about the actual configuration.
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.5 Specification Item RS_LT_00005

Trace References:

RS_**BRF_02200**MAIN_00260, RS_**BRF_01440** MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	The generation of the LT interface of each Application shall be enabled by the configuration.
Rationale:	Only the configured interfaces to the Applications, which are using log and trace, shall be generated.
AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.6 Specification Item RS_LT_00006

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The DET receives trace events from errors generated by BSW and Applications during debugging time. These events may be forwarded to the LT module.





Rationale:	To have an overview of all log, trace and error messages and to set all of them in the correct context, it is important to have all these messages and events in one list. Also it is not practicable to use more than one mechanism to report errors, logs and traces to an external client. So all these sources may be forwarded to the LT module.
AppliesTo:	CP
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.7 Specification Item RS_LT_00007

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The DEM may forward error events to the LT module.





Rationale:	It may be possible to get an overview of all error messages in an ECU. It may be possible to set them in the correct context with the error events reported by DEM. This makes an analysis of the reported errors more efficient and gives a correct picture of a failure situation.
AppliesTo:	CP
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.8 Specification Item RS_LT_00008

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	RTE shall provide the possibility to trace the VFB.





Rationale:	In the future more and more Applications will be integrated in one ECU. As a consequence the communication between Application is done locally and not over an external traceable bus like CAN or Flexray. It is important to trace the internal communication over RTE/VFB.
AppliesTo:	CP
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.9 Specification Item RS_LT_00009

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	VFB-Tracing shall be provided to the RTE generation system. The LT module shall implement the handling of the RTE/VFB trace events.
Rationale:	To understand the communication between the Applications it is important to trace all function calls to the Applications except the RTE system function calls.





AppliesTo:	CP
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.10 Specification Item RS_LT_00010

Trace References:

RS_BRF_01440MAIN_00260, RS_BRF_02160 MAIN_00011, RS_MAIN_00260

Content:

Type:	valid
Description:	There shall be a global switch to turn on and off the RTE tracing of LT at configuration time and at run time.
Rationale:	To have a high level activation for all RTE tracing messages a global switch is needed.
AppliesTo:	CP
Use Case:	



**Supporting
Material:**

—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.11 Specification Item RS_LT_00011**Trace References:**

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The LT may implement the handling of the RTE/VFB trace events.
Rationale:	To understand the communication between the Applications it is important to trace the function calls of an Application.
AppliesTo:	CP
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.12 Specification Item RS_LT_00012

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	LT may provide a solution to trace events linked to implicit communication mechanism. The implicit communication may be traced at runnable invocation and termination.
Rationale:	From the point of view of an Application no extra routine for receiving or sending signals (Sender Receiver Communication) with implicit sending/receiving is called.
AppliesTo:	
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.13 Specification Item RS_LT_00013

Trace References:

RS_BRF_01440MAIN_00260, RS_BRF_01240 MAIN_00011, RS_MAIN_00100, RS_MAIN_00010

Content:

Type:	Valid
Description:	The log and trace messages shall be packet oriented. Each packet shall have one or several headers and a payload.
Rationale:	LT shall not care about the under laying transport protocol. LT shall define the log or trace message format.
AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
 —Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.14 Specification Item RS_LT_00014

Trace References:

RS_BRF_01440MAIN_00260, RS_BRF_01240 MAIN_00011, RS_MAIN_00100,
RS_MAIN_00010

Content:

Type:	Valid
Description:	The log and trace messages shall be in binary format. This is necessary for reducing the bandwidth and the CPU consumption.
Rationale:	Scope of the LT component is to log and trace events without perturbing the ECU behavior. CPU consumption and bandwidth occupation may be reduced by using a binary format for the protocol.
Use Case:	—
Applies to:	FO
Dependencies:	—
Conflicts	None
Supporting Material	—

Type:	Valid
Description:	The log and trace messages shall be in binary format. This is necessary for reducing the bandwidth and the CPU consumption.
Rationale:	Scope of the LT component is to log and trace events without perturbing the ECU behavior. CPU consumption and bandwidth occupation may be reduced by using a binary format for the protocol.
AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>

–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.15 Specification Item RS_LT_00016

Trace References:

RS_**BRF_01440**MAIN_00260, RS_**BRF_01624** MAIN_00011, RS_MAIN_00430

Content:

Type:	Valid
Description:	The Endian format shall be considered in the message specification. The message shall signal which Endianness mode is actually used.
Rationale:	Big and Little Endianness of data representation has mixed occurrences in automotive ECUs. The message format shall be able to deal with both. To reduce CPU load it shall be possible to transport the data in the corresponding format of the ECU.
AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>

–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.16 Specification Item RS_LT_00017

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	Each log and trace message may contain a timestamp, which shall be added to the message during reception of the message in the LT module.
Rationale:	For comparing and analyzing complex systems a timestamp is important. The time shall be in a defined granularity.
AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.17 Specification Item RS_LT_00018

Trace References:

RS_**BRF_01440** **MAIN_00260**, RS_MAIN_00011

Content:

Type:	Valid
Description:	Every time a message from an Application is received by the LT module or other software module, it shall increment its global messages counter and set the counter in the message.
Rationale:	It is important to know if a message is lost. A receiving external client may then detect if messages are lost (e.g.because of a buffer overflow in LT or network loss).
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.18 Specification Item RS_LT_00019

Trace References:

RS_**BRF_01440** **MAIN_00260**, RS_MAIN_00011

Content:

Type:	Valid
Description:	Log levels shall be for example error, fatal, debug, information or verbose.
Rationale:	Standard for logging tools
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.19 Specification Item RS_LT_00020

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The log and trace message may contain a parameter, which represents the source of the log and trace message.
Rationale:	The source can be identified by the Session ID of the port interface (port defined argument value) which was used to send the message from Application to LT.





AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.20 Specification Item RS_LT_00021

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	There shall be additional parameters describing the group of the log and trace message.
Rationale:	Identifying some logically groups of log and trace to define some filtering action on the external client.
AppliesTo:	FO
Use Case:	—



**Supporting
Material:**

—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.21 Specification Item RS_LT_00022**Trace References:**

RS_BRF_01024 MAIN_00500, RS_MAIN_00220

Content:

Type:	Valid
Description:	Each ECU may have its unique ECU ID, which may be a parameter of each log and trace message.
Rationale:	An external client receives tracing from different ECU's so it's important to know the source.
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.22 Specification Item RS_LT_00023

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	In the payload the parameters of each log and trace message from the Application shall be transported. It may be possible to transport more than one parameter.
Rationale:	–
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.23 Specification Item RS_LT_00024

Trace References:

RS_MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	In most cases the parameter shall be transmitted in the raw format. This means that a separate file shall be provided containing the information about the transmitted parameters.
Rationale:	The non-verbose mode is for saving memory and bandwidth, because on the ECU only the ID's of the log and trace messages shall be stored.
AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.24 Specification Item RS_LT_00025

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	Because log and trace messages often consists of texts, there shall be the possibility to transmit text strings. It may be possible to replace the given text by an ID which may be replaced by the text in the external client (Compare verbose - non-verbose mode).
Rationale:	In small ECU strings can not be stored because of their memory usage. For this reasons these strings may be replaced by a message ID.
AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.25 Specification Item RS_LT_00026**Trace References:**

RS_MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	The data in non-verbose mode need to be described by an extra file. This file may be in a XML format.
Rationale:	In small ECUs memory is very limited, so temporarily buffered data shall be very small.
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.26 Specification Item RS_LT_00027

Trace References:

RS_BRF_01024 MAIN_00500, RS_MAIN_00220

Content:

Type:	Valid
Description:	Each message may have a unique identifier significant for identifying the source of the tracing. The ID of a specific message shall be permanent over the developing phase and shall be unique for a given ECU.





Rationale:	Easy identifying the right information in the log and trace message is very important. Unique message IDs helps doing this.
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.27 Specification Item RS_LT_00028

Trace References:

RS_BRF_02160 MAIN_00260

Content:

Type:	valid
Description:	A control message shall be implemented to permit the external client to evaluate the round trip time. The external client shall use this message to synchronize the individual log and trace messages from the different ECUs.
Rationale:	The log and trace time information may enable a user to understand what happens if there is a correlation among the recorded events. It is important to be able to refer all the events logged to an absolute time scale.





AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.28 Specification Item RS_LT_00029

Trace References:

RS_BRF_02008MAIN_00170, RS_BRF_02208 MAIN_00260, RS_MAIN_00170

Content:

Type:	valid
Description:	In production phase, the communication module (see RS_LT_00034) shall be disabled by default. In production phase LT shall use the security mechanisms provided by DCM to handle the access to the log and trace messages. A mechanism shall be implemented to enable the communication module for testing phase permanently.
Rationale:	Only authorized accesses to LT shall be allowed during production phase to avoid misuse.





AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.29 Specification Item RS_LT_00030

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	LT may shape the traffic bandwidth, depending on which transport interface is used for communication. The traffic shaping shall be done at runtime.
Rationale:	Since LT shall be used also in production phase, it is important that the traffic produced by the LT component will not cause an overload of the network and the ECU resources.
AppliesTo:	FO
Use Case:	



**Supporting
Material:**

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RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.30 Specification Item RS_LT_00031**Trace References:**

RS_BRF_02200 MAIN_00260

Content:

Type:	Valid
Description:	LT shall be configurable at runtime. LT shall have for this propose runtime configurable variables which are initialized with the corresponding configuration parameters. It shall be possible to query the LT runtime configuration. The configuration variables shall be writeable and readable over with some control .mechanism triggered remotely.
Rationale:	To adapt LT behavior to ECU and network resources it is important to have the capability of configuring it.
AppliesTo:	FO
Use Case:	





Supporting Material:	—
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RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.31 Specification Item RS_LT_00032

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	LT shall support control messages to set the trace status and log level of each source of each ECU.
Rationale:	—
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.32 Specification Item RS_LT_00033

Trace References:

RS_BRF_02168 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	It shall be possible to get a list of all Application IDs and context IDs with corresponding trace status and log levels which are registered to the LT module. Each Application or BSW module which wants to produce trace or log messages shall register to the LT module.
Rationale:	Users need to know what information can be traced or logged in order to monitor ECU activity.
AppliesTo:	FO
Use Case:	
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.33 Specification Item RS_LT_00034

Trace References:

RS_BRF_01440MAIN_00260, RS_BRF_01056 MAIN_00011, RS_MAIN_00220

Content:

Type:	valid
Description:	At debugging phase a communication interface with a high bandwidth is needed. This communication interface is out of scope of the AUTOSAR specification. To use this communication interface with LT a generic API shall be defined. The user shall be able to implement a board specific communication module to communicate over a board specific communication interface.
Rationale:	—
AppliesTo:	FO
Use Case:	—
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.34 Specification Item RS_LT_00035

Trace References:

RS_BRF_02144 MAIN_00260, RS_BRF_01440 MAIN_00420, RS_BRF_01056
MAIN_00260, RS_MAIN_00011, RS_MAIN_00220

Content:

Type:	Valid
Description:	DCM shall provide an interface for LT to send and receive data over the diagnostic service. Log and trace messages are sent over this service and control messages for LT are received.
Rationale:	LT needs an interface to send log and trace message out of the ECU. DCM provides a bus independent access to the ECU over standardized diagnostics. This is available during production phase and provides a secured session control.
AppliesTo:	CP
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.35 Specification Item RS_LT_00036

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	Valid
Description:	The LT may provide a buffer for storing log and trace messages. This may be a standard C-initialized buffer which shall be read out after init of LT.
Rationale:	This requirement shall guarantee that the LT module can provide its services to other BSW modules also before the complete initialization of all BSW modules.
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.36 Specification Item RS_LT_00037

Trace References:

RS_BRF_02184 MAIN_00260

Content:

Type:	Valid
Description:	If the communication module is not enabled or no external client for dumping log and trace message is connected, log and trace messages shall be stored locally in a memory buffer. The size of the buffer shall be set at configuration time.





Rationale:	To prevent a lack of communication e.g. at startup or if no external client is connected, the LT shall store some messages to be dumped as soon as communication channel is available.
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
 –Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.37 Specification Item RS_LT_00038

Trace References:

RS_BRF_02184 MAIN_00260, RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	LT shall permit to turn off or on traces or to set log levels for registered Application IDs and context IDs at runtime.
Rationale:	To gain efficiency in bandwidth and ECU resource usage a mechanism shall be provided to tune the transmission from Applications to LT.





AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.38 Specification Item RS_LT_00039

Trace References:

RS_BRF_01440MAIN_00260, RS_BRF_01824 MAIN_00011, RS_MAIN_00440

Content:

Type:	Valid
Description:	Some of the log Log and trace configurations like specific log levels Trace configuration shall be stored persistent.
Rationale:	The LT can be configured at runtime. Some of this L&T configuration data has to be stored to guarantee that at every startup the configuration would be the same.
AppliesTo:	FO
Use Case:	—





**Supporting
Material:**

–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.39 Specification Item RS_LT_00040

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	In order to adapt network traffic to bandwidth availability, the LT component may be able to filter log and trace messages. A policy shall be defined to distinguish messages by different log and trace levels.
Rationale:	–
AppliesTo:	FO
Use Case:	–
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.40 Specification Item RS_LT_00041

Trace References:

RS_BRF_01440 MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	Only one SW module per ECU shall gather the log and trace messages centrally.
Rationale:	None
AppliesTo:	FO
Use Case:	None
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
–Last change on issue 80283 comment 3–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.41 Specification Item RS_LT_00042

Trace References:

RS_BRF_01016 MAIN_00330

Content:

Type:	valid
Description:	The Log and trace SW component may shall be also part of the system during production phase. It is needed for use cases like test drives and remote diagnosis.
Rationale:	None
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.42 Specification Item RS_LT_00056

Trace References:

RS_MAIN_00260, RS_MAIN_00011

Content:

Type:	valid
Description:	The log and trace messages shall contain a description of the parameters in verbose mode. No additional description file needs to be provided in this case.
Rationale:	In the verbose mode all parameters of the payload contain a self-description of their own type (e.g. integer/float, bit length) and some additional information (e.g. variable name, unit, etc).
AppliesTo:	FO
Use Case:	
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80283: [RS_LogAndTrace] Remove references to RS_BSF_* items

Problem description:

The RS_BSF_* documents are marked as deprecated and our requirements should not trace back to these documents but instead should trace back to RS_Main.

Agreed solution:

Proposed solution, please refer to <https://bugzilla.autosar.org/attachment.cgi?id=4792>
—Last change on issue 80283 comment 3—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.43 Specification Item RS_LT_00057**Trace References:**

RS_Main_00400

Content:

Type:	Valid
Description:	It shall be possible to trace the communication between applications.
Rationale:	More and more applications are integrated on one ECU. As a consequence the communication between applications is done locally and not over an external traceable bus like CAN.
AppliesTo:	FO
Use Case:	Trace the communication between applications.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80277: [DLT] Log and Trace communication flow traceability requirement

Problem description:

In order to debug or analyze the communication between Adaptive Applications, the system integrator could enable the tracing of a given Adaptive Application during compile time (if the tracing feature is enabled/supported by the Adaptive Application in question).

Agreed solution:

Add a new requirement after chapter 5.2.1.1.3 [RS_LT_00049] Providing Logging Information:

5.2.1.1.4 [RS_LT_00057] Providing Tracing Information:

Type: Valid

Description: It shall be possible to trace the communication between applications.

Rationale: More and more applications are integrated on one ECU. As a consequence the communication between applications is done locally and not over an external traceable bus like CAN

Use Case: Trace the communication between applications

Applies to: AP, CP

—Last change on issue 80277 comment 12—

BW-C-Level:

Application	Specification	Bus
1	1	1