MOST

ASC Logging Format

Specification

Version 1.8.8 of 2016-12-19

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VECTOR

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Revision list

Version	Date	Editor	Section	Changes, comments
1.0.0	2005-01-18	Mm		Created
1.0.1	2005-02-25	Mm		DataLost event rectified; <DLInfo> updated
1.0.2	2005-04-06	Mm		More infos added for HW mode, register and NetState events
1.0.3	2007-05-22	Mm		format description reviewed and released for CANoe/CANalyzer versions 5.1, 5.2, 6.0, 6.1
1.1.0	2007-10-17	Mm		reviewed and released for CANoe/CANalyzer 7.0; new events recorded with 7.0: Statistic Extended, TxLight, Stress, AllocTable
1.1.1	2007-11-28	Hil		StableLock, CriticalUnlock added
1.1.2	2008-10-20	Mm		Minor clarifications in symbol table; reviewed and released for CANoe/CANalyzer 7.1
1.1.3	2008-12-10	Mm		Minor clarifications
1.2.0	2009-01-30	Mm		MOST150 events; Symbols table sorted reviewed and released for CANoe/CANalyzer 7.1 SP2
1.3.0	2009-04-29	Mm		MOST System Event added reviewed and released for CANoe/CANalyzer 7.1 SP4
1.4.0	2009-05-18	Mm	1	Added disclaimer
1.4.1	2009-08-03	Mm	3.4	<RegID> and <RegValue> adapted: special register event transports MAC address for Ethernet over MOST150 since CANoe/CANalyzer 7.2
1.5.0	2009-09-24	Mm	3.2, 3.3.1, 3.3.23, 3.4, 3.4.1, 3.4.2, 3.4.5, 3.4.9	AckNack and State fields adapted; MOST150 Allocation Table event added; new HW modes; new stress modes; reviewed and released for CANoe/CANalyzer 7.2
1.6.0	2010-01-08	Mm	3.3.17, 3.3.19, 3.3.23, 3.3.24, 3.3.25, 3.4.7	Additional DataLost flag; Events for MOST50; reviewed and released for CANoe/CANalyzer 7.2 SP3
1.7.0	2010-11-10	Mm	3.3.18, 3.4	Increased Packet Length for MOST150; reviewed and released for CANoe/CANalyzer 7.5
1.8.0	2011-04-06	Mm	3.3.26, 3.4	ECL event added
1.8.1	2011-06-07	Tlr	3.4	Max value of FirstDataLen changed to 1524; reviewed and released for CANoe/CANalyzer 7.6 SP2
1.8.2	2011-09-29	Mm	3.4, 3.4.5	Stress mode added; HW mode flag EthSpy added; reviewed and released for CANoe/CANalyzer 7.6 SP3

Version	Date	Editor	Section	Changes, comments
1.8.3	2012-01-24	Mm	3.3.16, 3.3.18, 3.3.19, 3.3.20, 3.4, 3.4.8	PAck and CAck details Fragments are now marked as MOST50 or MOST150
1.8.5	2012-04-12	Mm	all	Minor corrections; reviewed and released for CANoe/CANalyzer 8.0
1.8.6	2012-08-16	Mm	3.4	Explanation of length fields in fragment events Maximum number of free bytes in AllocTable event
1.8.7	2013-03-20	Tlr	3.4	New value for SysID
1.8.8	2016-12-19	Mom	all	CI and Layout

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Contents

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2 Overview

The document specifies the format of MOST events in the CANoe/CANalyzer ASC logging.

3 Format

3.1 Header

Events can either be recorded in hexadecimal ("base hex") or decimal mode ("base dec"). Timestamps are written absolute ("timestamps absolute") or relative to the preceding event ("timestamps relative"). See section 3.2 for an example.

3.2 Example

The following MOST25 logging contains NetState events, Special Register events, HW Mode events, LightLock events, Allocation Table events, Control messages (node and spy), Asynchronous messages (Packets) and Statistic events.

```
date Wed Aug 26 08:55:26 am 2009
base hex  timestamps absolute
internal events logged
// version 7.2.0
Begin Triggerblock Wed Aug 26 08:55:26 am 2009
   0.000000 Start of measurement
   0.003020 M1 NetState: 0 2
   0.007512 M1 Register: 0 8A 0100
   0.007512 M1 Register: 0 89 0044
   0.007512 M1 Register: 0 8F 0000
   0.007512 M1 Register: 0 91 0002
   0.007512 M1 Register: 0 87 0000
   0.007512 M1 Register: 0 90 0002
   0.007512 M1 Register: 0 96 000C
   0.008165 M1 HWMode:   32 B3
   0.008385 M1 TxLight:  1
   0.008638 M1 LL: 1
   0.008638 M1 NetState: 2 3
   0.008638 M1 LL: 10
   0.008638 M1 NetState: 3 6
   0.008638 M1 NetState: 3 4
   0.011020 M1 AllocTab: 003C  70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70
70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70
70 70 70 70 70 70 70 70
   0.011314 M1 Register: 0 E8 0FFF
   0.011547 M1 Register: 0 BE 000B
   0.011547 M1 Register: 0 BF 0006
   0.012845 M1 Tx   0100 0400 04  00 7F 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00  1250
   0.013023 M1 Rx   0100 0400 04  00 7F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  01 01
0000
   0.013576 M1 Tx   0100 0400 04  00 7F 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00  1250
   0.013749 M1 Rx   0100 0400 04  00 7F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  01 01
0000
   0.111712 M1 Rx   0100 0401 00  01 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00  01 01
39CF
   0.111757 M1 Tx   0100 0401 00  01 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00  1250
   0.113520 M1 Rx   FFFF 0100 00  01 01 00 0C 04 31 01 52 01 00 00 00 00 00 00 00 00 00  1011
   0.113526 M1 Rx   FFFF 0100 00  01 01 00 0C 04 31 01 52 01 00 00 00 00 00 00 00 00 00  01 12
AA33
// ...
   1.002878 M1 MostStatistic: Fr:    39 Lt:     1 Bl:     0 Pk:     0
   1.002878 M1 StatEx:   000000 01561A
// ...
   4.441498 M1 Pkt: Rx   0101 0100 00 01 0 03 0000 00E  52 01 E0 3C 90 05 CA 7F 03 EE 01 00 00
00
   4.443198 M1 Pkt: Tx   0100 0101 40 01 0 01 0000 00E  52 01 E0 3C 90 08 F2 41 01 7F 03 EE 13
88
   4.445080 M1 Pkt: Rx   0101 0100 00 01 0 03 0000 00A  52 01 E0 3C 90 01 FD 00 00 00
End TriggerBlock
```

3.3 Events

The section lists all MOST events of the CANoe/CANalyzer ASC logging format. See section 3.4 for an explanation of the symbols.

3.3.1 MOST25 Control Message Node Mode

Message on MOST25 Control Channel received or transmitted in node mode.

Format	<Time> <Channel> <Dir> <SourceAdr> <DestAdr> <RType> <D0> <D1>...<D16> <State2>
Example	0.111757 M1 Tx 0100 0401 00 01 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 1250

3.3.2 MOST25 Control Message Spy Mode

Message on MOST25 Control Channel received in spy mode (listen only).

Format	<Time> <Channel> <Dir> <SourceAdr> <DestAdr> <RType> <D0> <D1>…<D16> <State> <AckNack> <CRC>
Example	0.113526 M1 Rx FFFF 0100 00 01 01 00 0C 04 31 01 52 01 00 00 00 00 00 00 00 00 01 12 AA33

3.3.3 MOST25 Packet

Message on MOST25 Packet Data Channel.

Format	<Time> <Channel> Pkt: <Dir> <SourceAdr> <DestAdr> <PktState> <TransferType> <PktPrio> <PktArbitr> <CRC2> <PktLen> <D0> <D1> … <D(PktLen-1)>
Example	4.445080 M1 Pkt: Rx 0101 0100 00 01 0 03 0000 00A 52 01 E0 3C 90 01 FD 00 00 00

3.3.4 MOST Light Lock Event

This event refers to the optical or electrical modulated signal at the transceiver's Rx.

"Signal On" means that a modulated signal has been detected.

"Lock" means that the receiver PLL (Phase Locked Loop) was able to establish synchronization with the phase of the modulated signal (to "lock").

"Stable Lock" means that for a certain period of time no unlock occurred (see MOST specification).

In case of a series of unlocks, the time of the different unlocks are accumulated. If this accumulated time is greater than a certain threshold, it is called "Critical Unlock" (details see MOST specification).

Format	<Time> <Channel> LL: <LLState>
Example	0.008638 M1 LL: 1

3.3.5 MOST Special Register Event

This event reports the change of an important transceiver register like node position or node address (see section 3.4.4). It can occur spontaneous or as result of a read/write operation (see 0). Directly after measurement start the current values of the special registers are reported even if they have not changed.

Format	<Time> <Channel> Register: <RegSubType> <RegID> <RegValue>
Example	1.4713 M1 Register: 1 8A 0172

3.3.6 MOST Common Register Event

This event transports a register read or write result (e.g. reading the routing engine of the OS8104). Unlike the special register event this event does not occur spontaneous.

Format	`<Time> <Channel> RegData: <RegSubType> <RegChip> <RegOffset> <RegDataLen> <D0>…<D(RegDataLen-1)>`
Example	`9.0500 M1 RegData: 0 01 0000 10 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F`

3.3.7 MOST HW Mode Event

This event is fired when one or more HW state changes. HW states are the AllBypass bit (ABY of OS8104), the Master/Slave selection (MTR of OS8104), the Control spy and the Asynchronous spy. The event transports all states even if only a single state has changed. <HWModeMask> denotes which state differs regarding to the previous HW mode event. See section 3.4.5 for the state encoding in the bit field.

Format	`<Time> <Channel> HWMode: <HWMode> <HWModeMask>`
Example	`3.5600 M1 HWMode: 01 01`

3.3.8 MOST NetState Event

Network state derived by MOST Supervisor Layer I+II (see section 3.4.6).

Format	`<Time> <Channel> NetState: <NetStateOld> <NetStateNew>`
Example	`1.0279 M1 NetState: 2 3`

3.3.9 MOST Data Lost Event

Indicates loss of data. (Number of lost messages and start and end time stamp of data loss.)

Format	`<Time> <Channel> DataLost: <DLInfo> <DLCtrl> <DLAsync> <DLTime> <DLTime>`
Example	`1.3037 M1 DataLost: 00000005 003F 000D 101.30369 2223.52592`

3.3.10 MOST Trigger Event

Event transports changes of HW IO pins. The event is used for debugging purposes only.

Format	`<Time> <Channel> Trigger: <TrigMode> <TrigHW> <TrigValue> <TrigValue>`
Example	`1.3037 M1 Trigger: 2 4 00000001 00000000`

3.3.11 MOST Statistic Event

The event transports common network statistics. These are the number of Control messages (Fr), number of signal state transition (Lt) events and number of packets (Pk) since the last Statistic event. Bl denotes the fill level of the interface's event queue (Optolyzer G1 only).

Usually the event is not visible in a trace window.

Format	`<Time> <Channel> MostStatistic: Fr: <StatVal> Lt: <StatValue> Bl: <StatVal> Pk: <StatValue>`
Example	`2.0300 M1 MostStatistic: Fr: 0 Lt: 4 Bl: 0 Pk: 0`

3.3.12 MOST Statistic Extended Event (CodingErrors and FrameCounter)

Event transports some bus statistic information that was previously (until CANoe/CANalyzerVersion 6.1) carried by the main bus statistic event but was not logged. Usually the event is not visible in a Trace window.

Format	`<Time> <Channel> StatEx: <CodingErrors> <FrameCounter>`
Example	`2.024742 M2 StatEx: 000006 00A395`

3.3.13 MOST TxLight

Optical physical layer: Information about light output of the Fiber Optical Transmitter

Electrical physical layer: Signal output state

Format	<Time> <Channel> TxLight: <TxLightState>
Example	0.008638 M1 TxLight: 1

3.3.14 MOST Stress Event

Information about Stress activity of VN2600/2610 Hardware

Format	<Time> <Channel> Stress: <StressMode> <StressState>
Example	1.793083 M1 Stress: 2 1

3.3.15 MOST25 Alloc Table

The event transports the current Allocation Table of the connected hardware interface.

The label of a synchronous connection can be distributed over several bytes in the Allocation Table. Each byte <Dx> contains a value that specifies the identification number of the label it belongs to. If the device is a timing master, the MSB of the byte value is used to indicate if the label is in use or not, otherwise the MSB should be ignored. The label number thus can be determined by byte value & 0x7F. If the resulting label number is 0x70, the byte is not used for any label.

Format	<Time> <Channel> AllocTab: <AllocTableSize> <D0>… <DallocTableSize-1>
Example	0.032775 M2 AllocTab: 003C 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70

3.3.16 MOST150 Control Message

Message on MOST150 Control Channel.

Format	<Time> <Channel> Msg150: <Dir> <SourceAdr> <DestAdr> <State> <AckNack> <TransferType> <Pack> <Priority> <Pindex> <CRC2> <Cack> <RsvdUL> <Msg150Len> <D0> <D1>…<D(Msg150Len-1)>
Example	5.7088 M1 Msg150: Tx 0172 03C8 02 11 01 22 01 33 AABB 44 00 08 11 22 33 34 00 02 11 22

3.3.17 MOST50/150 Control Message Fragment

Partial transmitted MOST50 or MOST150 Control Channel message. Fragments are reported from a network spy if the message transmission is corrupted or terminated.

Format	<Time> <Channel> Msg150Frg: <FrgMask> <SourceAdr> <DestAdr> <AckNack> <PAck> <Priority> <Pindex> <CRC2> <Cack> <RsvdUL> <FrgDataLen> <FrgDataLenAnnounced> <FirstDataLen> <D0> <D1>…<D(FirstDataLen-1)>
Example	5.7088 M1 Msg150Frg: 01020304 0172 03C8 11 22 01 33 AABB 44 00 0006 0210 06 01 02 03 04 05 06

3.3.18 MOST150 Packet

Message of MOST150 Packet Data Channel.

Format	<Time> <Channel> Pkt150: <Dir> <SourceAdr> <DestAdr> <State> <AckNack> <TransferType> <Pack> <RsvdUC> <Pindex> <CRC2> <Cack> <RsvdUL> <Pkt150Len> <D0> <D1>…<D(PktLen-1)>
Example	5.7088 M1 Pkt150: Tx 0172 03C8 02 11 01 00 00 33 AABB 44 00 08 11 22 33 34 00 02 11 22

3.3.19 MOST50/150 Packet Fragment

Partial transmitted message on MOST50 or MOST150 Packet Data Channel.

Format	<Time> <Channel> Pkt150Frg: <FrgMask> <SourceAdr> <DestAdr> <AckNack> <PAck> <RsvdUC> <Pindex> <CRC2> <Cack> <RsvdUL> <FrgDataLen> <FrgDataLenAnnounced> <FirstDataLen> <D0> <D1>…<D(FirstDataLen-1)>
Example	5.7088 M1 Pkt150Frg: 01020304 0172 03C8 11 22 01 33 AABB 44 00 0006 0210 06 01 02 03 04 05 06

3.3.20 MOST Ethernet Packet

Message on MOST150 Ethernet Packet Channel.

Format	<Time> <Channel> PktEth: <Dir> <SourceMacAdr> <DestMacAdr> <State> <AckNack> <TransferType> <PAck> <CRC4> <Cack> <RsvdUL> <PktEthLen> <D0> <D1>…<D(PktEthLen-1)>
Example	5.7088 M1 PktEth: Tx 010203040506 112233445566 02 11 01 22 AABBCCDD 44 00 08 11 22 33 34 00 02 11 22

3.3.21 MOST Ethernet Packet Fragment

Partial transmitted message on MOST150 Ethernet Packet Channel.

Format	<Time> <Channel> PktEthFrg: <FrgMask> <SourceMacAdr> <DestMacAdr> <AckNack> <PAck> <CRC4> <Cack> <RsvdUL> <FrgDataLen> <FrgDataLenAnnounced> <FirstDataLen> <D0> <D1>…<D(FirstDataLen-1)>
Example	5.7088 M1 PktEthFrg: 01020304 010203040506 112233445566 11 01 AABBCCDD 44 00 0006 0210 06 01 02 03 04 05 06

3.3.22 MOST System Event

Event for various system states.

Format	<Time> <Channel> System: <SysID> <SysValue> <SysValueOld>
Example	1.0279 M1 System: 01 0001 0000

3.3.23 MOST50/150 Allocation Table

The event transports the current state and changes of the MOST50/MOST150 Allocation Table.

Format	<Time> <Channel> AT150: <AT150EventModeFlags> <FreeBytes> <AT150Size> <W0>… <WAT150Size-1>
Example	Label 0x10B (unchanged, 4 bytes), label 0x151 (added, 70 bytes): 44.814398 M1 AT150: 00 002E 0004 010B 0004 4151 0046 Label 0x10B (unchanged, 4 bytes), label 0x151 (removed, 70 bytes): 50.126855 M1 AT150: 00 0074 0004 010B 0004 8151 0046

The data layout (<W0>… <WAT150Size-1>) depends on bit 0 of <AT150EventModeFlags>:

If bit 0 of <AT150EventModeFlags> is clear the following layout is applied. (Other data layouts are not specified yet.)

```
<W0> <W1> <W2> <W3> <W4> <W5>
SLLL WWWW SLLL WWWW SLLL WWWW...

S:    Label status (4 bit)
      0: label unchanged
      4: label has been added (allocated)
      8: label has been removed (de-allocated)
LLL:  Synchronous Connection Label
WWWW: Width of label in bytes
```

List removed labels at the end! Listing of removed labels is optional.

3.3.24 MOST50 Control Message

Message on MOST50 Control Channel.

Format	<Time> <Channel> Msg50: <Dir> <SourceAdr> <DestAdr> <State> <AckNack> <TransferType> <RsvdUC> <Priority> <RsvdUC> <CRC2> <RsvdUC> <RsvdUL> <Msg50Len> <D0> <D1>…<D(Msg50Len-1)>
Example	0.200000 M1 Msg50: Rx EF00 0101 01 00 02 00 00 00 5678 00 00 09 11 01 22 23 04 11 22 33 44

3.3.25 MOST50 Packet

Message on MOST50 Packet Data Channel.

Format	<Time> <Channel> Pkt50: <Dir> <SourceAdr> <DestAdr> <State> <AckNack> <TransferType> <RsvdUC> <RsvdUC> <RsvdUC> <CRC2> <RsvdUC> <RsvdUL> <PktLen> <D0> <D1>…<D(PktLen-1)>
Example	5.7088 M1 Pkt50: Tx 0172 03C8 02 11 01 00 00 00 AABB 00 00 08 11 22 33 34 00 02 11 22

3.3.26 MOST ECL

State change of the MOST Electrical Control Line.

Format	<Time> <Channel> Ecl: <EclMode> <EclState>
Example	0.009068 M1 Ecl: 0 1

3.4 Symbols

Explanation of symbols used in descriptions above.

Symbol	Width in chars (hex)	Width in chars (dec)	Meaning	Range	Example (hex)	Special
<AckNack>	2	3	acknowledge state (see 3.4.2)	0…0xFF	02	2)
<AllocTableSize>	4		Size of allocation table. On MOST25 channels this value is always 60.	0…0xFFFF	003C	1)
<AT150EventModeFlags>	2		If Bit0 is set the event transports a channel list for each label.	0, 1	00	1)
<AT150Size>	4		Size of MOST50/150 alloction data (number of word values)	0…5000	0004	1)
<CAck>	2		CRC acknowledge code 0x00: No Response 0x01: CRC error 0x04: OK	0…0xFF		1) 2)
<Channel>	2	2	application channel	M1…M16	M1	
<CodingErrors>	6		Number of coding errors	0…0xFFFFFF	00000C	1)
<CRC>	4	5	CRC	0…0xFFFF	ABCD	
<CRC2>	4		2 byte CRC	0…0xFFFF	AABB	1) 2)
<CRC4>	8		4 byte CRC	0…0xFFFFFFFF	AABBCCDD	1) 2)
<D0>… <DallocTableSize – 1>	2		Allocation Table byte values	(0…0xFF)*	ED 00 2F B2 C0 FF 23 …	1)
<DestAdr>	4	5	target address	0…0xFFFF	0103	
<DestMacAdr>	12		48 bit target address	0…0xFFFFFFFFFFFF	010203040506	1)
<Dir>	4	4	direction of transmission	Rx, Tx, TxRq	Rx	
<DLAsync>	4		number of lost messages on Packet Data channel	0…0xFFFF		1)
<DLCtrl>	4		number of lost messages on Control channel	0…0xFFFF		1)
<DLInfo>	8		data loss information (see 3.4.7)	0…0xFFFFFFFF	00000005	1)
<DLTime>	>=9	>=9	absolute time in seconds		1.2345	usually 4 decimal places
<Dx>	2	3	data byte x	0…0xFF	1E	
<EclMode>	1		0: discrete 1: sequence	0, 1	0	1)
<EclState>	1		EclMode = 0: 0 – line low 1 – line high EclMode = 1: 0 - sequence stopped	0, 1	1	1)

			1 - sequence started			
<FirstDataLen>	2…8	3…10	Number of bytes stored in the payload field. Note: In order to limit the size of this event not all counted bytes (s. FrgDataLen) on bus will be stored in the payload of the logging event.	0…1524	06	3)
<FrameCounter>	6		Frame Counter	0…0xFFFFFF	12345A	1)
<FreeBytes>	4		Number of unreserved bytes for synchronous data Max. 116 with SBC=29 for MOST50 Max. 372 with SBC=93 for MOST150	0…372	013A	1)
<FrgDataLen>	4…8		Number of transmitted user data bytes in fragments. These bytes were counted on bus. Note: The number of bytes saved in this event is stored in FirstDataLen.	0…0xFFFFFFFF	0033	1) 3)
<FrgDataLenAnnounced>	4…8		Announced user data length at start of transmission. In some cases (e.g. sending to an invalid target address, receive buffer full of target device) the transmission is terminated before all data bytes have been sent. Then the counted number of bytes on bus is less than the announced data length (FrgDataLen < FrgDataLenAnnonced>). Due to rare and very specific bit errors (degrade of end termination byte) FrgDataLen can also be greater than FrgDataLenAnnonced.	0…0xFFFFFFFF	0033	1) 3)
<FrgMask>	8		bit field which denotes the valid data fields in fragment events (see 3.4.8)	0…0xFFFFFFFF	0000007F	1)
<HWMode>	2		HW mode (see 3.4.5)	0…0xFF	01	1)
<HWModeMask>	2		bitmask of changed bits	0…0xFF	01	1)
<LLState>	1…2	1…2	Signal state: 0x01 - Signal On + Lock		3	

			0x02 - Signal Off (implies No Lock) 0x03 - Signal On + No Lock 0x10 - Stable Lock 0x20 - Critical Unlock			
<Msg150Len>	2	3	number of data bytes	6…0x33	33	
<Msg50Len>	2	3	number of data bytes	5…0x11	11	
<NetStateNew>	1		new network state (see 3.4.6)	3	0,2,3,4,5	1)
<NetStateOld>	1		old network state (see 3.4.6)	2	0,2,3,4,5	1)
<PAck>	2		pre-emptive acknowledge 0x00: No Response 0x01: Buffer full 0x04: OK	0…0xFF	00	1) 2)
<Pindex>	2		message/packet index	0…0xFF	1A	1) 2)
<Pkt150Len>	3	4	number of data bytes	0…1524	00A	
<PktArbitr>	2		arbitration byte	0…0xFF	00	1) 2)
<PktEthLen>	3	4	number of Ethernet data bytes	0…1506	00A	
<PktLen>	3	4	number of data bytes	0…1014	00A	
<PktPrio>	1		priority	0…0xF	1	1)
<PktState>	2		packet state 0 for Rx 0x40 – TxOk	0, 0x40	00	1)
<Priority>	2		transmission priority	0…0xFF	01	1)
<RegChip>	2		ID of chip 1 – OS8104	0…0xFF	01	1)
<RegDataLen>	2		number of registers	0…0x10	10	1)
<RegID>	2		ID of register (see 3.4.4)	0…0xFF	8A	1)
<RegOffset>	4		address of register	0…0xFFFF	0000	1)
<RegSubType>	1	1	type of register event (see 0)	0…7	1	
<RegValue>	4, 12		register value	0…0xFFFF	0172	1)
<RsvdUC>	2		reserved unsigned char; write 00	0…0xFF	00	1)
<RsvdUL>	2…8		reserved unsigned long; write 00	0…0xFFFFFFFF	00	1) 3)
<Rtype>	2	3	message sub type 0 – Normal 1 – RemoteRead 2 – RemoteWrite 3 – Alloc 4 – Dealloc 5 – GetSource >5 – not used so far	0…0xFF	01	
<SourceAdr>	4	5	source address	0…0xFFFF	0102	
<SourceMacAdr>	12		48 bit source address	0…0xFFFFFFFFFFFF	010203040506	1)
<State>	2	3	message state (see 3.4.1)	0…0xFF	01	

<State2>	2…4	3…5	message state (see 3.4.9)	0…0xFFFF	1250	
<StatVal>		5	statistic value	0…99999	4	dec always
<StressMode>	1		Stress mode of HW interface: 1 – Light 2 – Lock 3 – Busload Ctrl 4 – Busload Async 5 – Rx Buffer Ctrl 6 – TxLight power 7 – Bypass toggling 8 – SystemLock flag usage 9 – Shutdown flag usage 10 – Rx Buffer Async	1…0xA	1	1)
<StressState>	1		State of Stress mode 0 – Stopped 1 – Started	0, 1	0	1)
<SysID>	2		Identification of transported data (enumeration): 1 – System Lock (MOST150) 2 – Shutdown flag (MOST150) 3 – Shutdown reason (MOST150)	1, 2, 3	01	1)
<SysValue>	4		System value/state	0…0xFFFF	0001	1)
<SysValueOld>	4		Previous value/state	0…0xFFFF	0000	1)
<Time>	>=9	>=9	absolute or relative time in seconds		1234.5678	usually 4 decimal places
<TransferType>	2		1 – Node: MOST transceiver reported the message (either due to a successful reception or as acknowledgment for a transmit request). 2 – Spy: Message was reported by the network spy. The Spy sees all messages independently of the destination address. Note: this information is not transferred on the bus.	1, 2	02	1)
<TrigHW>	1		HW that generated the trigger event 0 – unknown 1 – Optolyzer 2 – reserved 3 – reserved 4 – VN2600/VN2610	0…5	4	1)

			5 – OptoLyzer OL3150o 6 – VN2640 7 – OptoLyzer OL3050e 8 – SMSC PCI 50 9 – MOCCAcompact50e			
<TrigMode>	1		trigger mode: 0 – unknown 1 – synchronization master 2 – synchronization slave	0…2	2	1)
<TrigValue>	8		value of IO register	0…0xFFFFFFFF	00000001	1)
<TxLightState>	1		Light/signal state at output 0 - TxLight/Signal off 1 - TxLight/Signal enabled 2 - TxLight/Signal forced on	0, 1, 2	1	1)
<Wx>	4		data word x	0…0xFFFF	89AB	1)

1) hexadecimal always

2) valid for spy messages only

3) the data field actually has a width of 4 bytes; leading zeros are only written to reach the minimum number of characters (see column ‘width in chars’); a parser shall be able to cope with up to 8 (hex) / 10 (dec) characters for the DWORD value.

3.4.1 <State>

Bit	Meaning	Restriction
0	0: bus inactive 1: bus active	only for Dir = Rx or spy messages
1	1: unlock event during transmission	only for Dir = Rx or spy messages
4	1: acknowledged (Ack)	only for Dir = Tx (always set to 1 for Rx messages in node mode)
5	1: negative acknowledge (NAck)	only for Dir = Tx
6	Send result: 0: Transmission error (TxF) 1: OK	only for Dir = Tx

Note: In case of broadcast transmission, Ack and NAck can both be set.

3.4.2 <AckNack>

AckNack holds the transmit status of a control message (see Transmit Status Register of OS8104 for MOST25).

Bit	Meaning	Restriction
0	1: no response (NoResp)	only for Dir = Tx or spy messages
1	1: valid receipt (Valid)	only for Dir = Tx or spy messages
2	1: CRC Error (CRCError)	only for Dir = Tx or spy messages
3	1: receive buffer full (RxBufFull)	only for Dir = Tx or spy messages
4	1: acknowledged (Ack)	only for Dir = Tx or spy messages (always set to 1 for Rx messages in node mode)
5	1: negative acknowledge (NAck)	only for Dir = Tx or spy messages

Note: In case of broadcast transmission, Ack and NAck can both be set.

3.4.3 <RegSubType>

Value	Meaning
kUnspecified = 0	unspecified (or HW does not support sub types)
kNotify = 1	notification on register change (spontaneous)
kReadRequest = 2	request of a register read operation
kWriteRequest = 3	request of a register write operation
kReadResult = 4	result of a register read operation
kWriteResult = 5	result of a register write operation
kReadFailed = 6	register read operation failed
kWriteFailed = 7	register write operation failed

3.4.4 <RegID>

Value	Meaning
kEmpty = 0x0	
kNPR = 0x87	8 bit Node Position Register
kGA = 0x89	8 bit Group (Group Address = 0x0300 + Group)
kNA = 0x8A	16 bit Node Address
kNDR = 0x8F	8 bit Node Delay (MOST25 only)
kMPR = 0x90	8 bit Number of nodes with open bypass
kMDR = 0x91	8 bit Maximum Delay (MOST25 only)
kSBC = 0x96	8 bit Synchronous Bandwidth Control (SBC) Synchronous Bandwidth = 4 x SBC Maximum values for SBC: MOST25: 15 (= 60 Bytes) MOST50: 29 (= 116 Bytes) MOST150: 93 (= 372 Bytes)
kAPA = 0xE8	16 bit Alternate Packet Address (MOST25 only)
kXTIM = 0xBE	8 bit Transmit Retry Time
kXRTY = 0xBF	8 bit Number of send attempts
kMacAdr = 0xFE	48 bit MAC address (EUI-48, conforming to the IEEE standard; MOST150 only)

3.4.5 <HWMode>

Bit	Meaning
kMostHWMode_AllBypass = 0x01	1: bypass active
kMostHWMode_Master = 0x02	Timing mode: 0: slave; 1: master
kMostHWMode_MasterMode = 0x04	0: static master; 1: non-static master
kMostHWMode_NoEthPktSpy = 0x08	0: Ethernet Spy active: 1: blocks "Ethernet Spy over MOST" channel
kMostHWMode_SpyCtrl = 0x10	1: spy for control channel active
kMostHWMode_SpyAsync = 0x20	1: spy for async. channel active
kMostHWMode_NoEthernet = 0x40	1: no "Ethernet over MOST" events (MOST150)
kMostHWMode_NoAsync = 0x80	1: no events from async. channel

3.4.6 <NetStateOld>, <NetStateNew>

Value	Meaning	
0	Undefined	Before the first event (shortly after measurement start) the network status is unknown.
1	Reserved	Reserved for Ring Break Diagnostics mode

2	PowerOff	The network interface to the MOST ring is deactivated. The Tx FOT is not emitting any light.
3	NetInterfaceInit	The network interface is ready to communicate in the MOST ring.
4	ConfigNotOk	The network interface is in normal operating mode (stable lock).
5	ConfigOk	From the perspective of the Network Master the system configuration is valid.
6	NetOn/InitReady	NetOn/InitReady reported to application

3.4.7 <DLInfo>

Bit	Meaning
0	1: data loss on control channel (spy)
1	1: data loss on control channel (node)
2	1: data loss on asynchronous channel (spy)
3	1: data loss on asynchronous channel (node)
4	1: data loss on synchronous channel
5	1: data loss since driver queue full
6..31	reserved

3.4.8 <FrgMask>

If bit in <FrgMask> is set, the corresponding data field has been seen on the bus.

Bit	Data field
0: 0x00000001	<FrgDataLenAnnounced>
1: 0x00000002	<SourceAdr>
2: 0x00000004	<DestAdr>
3: 0x00000008	<AckNack>
4: 0x00000010	<PAck>
5: 0x00000020	<PIndex>
6: 0x00000040	<Priority>
7: 0x00000080	<CRC2> or <CRC4>
8: 0x00000100	<CAck>
9: 0x00000200	<SourceMacAdr>
10: 0x00000400	<DestMacAdr>
31: 0x80000000	0: MOST150 fragment; 1: MOST50 fragment

3.4.9 <State2>

Bit	Meaning	Restriction
0	0: bus inactive 1: bus active	only for Dir = Rx
1	1: unlock event during transmission (Unl)	only for Dir = Rx
4	1: acknowledged (Ack)	only for Dir = Tx (always set to 1 for Rx messages)
5	1: negative acknowledge (NAck)	only for Dir = Tx
6	Send result: 0: Transmission error (TxF) 1: OK	only for Dir = Tx
8	1: no response (NoResp)	only for Dir = Tx
9	1: valid receipt (Valid)	only for Dir = Tx
10	1: CRC Error (CRCError)	only for Dir = Tx
11	1: receive buffer full (RxBufFull)	only for Dir = Tx

12	1: acknowledged (Ack)	only for Dir = Tx
13	1: negative acknowledge (NAck)	only for Dir = Tx

Note: In case of broadcast transmission, Ack and NAck can both be set.