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| <b>Document Title</b>             | SWS_WirelessEthernetTransceiverDriver:<br>Complete Change<br>Documentation 4.3.0 - 4.3.1 |
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# 1 SWS\_WirelessEthernetTransceiverDriver

## 1.1 Specification Item SWS\_WEthTrcv\_00085

### Trace References:

none

### Content:

| API function             | Description  |
|--------------------------|--|
| Dem_SetEventStatus       | Called by SW-Cs or BSW modules to report monitor status information to the Dem. BSW modules calling Dem_SetEvent Status can safely ignore the return value.  |
| EthIf_TrvcModeIndication | Called asynchronously when <b>mode a mode change</b> has been read out. <b>Triggered by previous EthIf</b> the function is triggered by previous call of EthTrcv_SetTransceiverMode call. <b>Can it can</b> directly be called within the trigger <b>functionsfunction</b> . |
| SchM_Enter_WEthTrcv      | Invokes the SchM_Enter function to enter a module local exclusive area.  |
| SchM_Exit_WEthTrcv       | Invokes the SchM_Exit function to exit an exclusive area.  |
| WEth_ReadTrcvRegs        | Reads a transceiver register   |
| WEth_WriteTrcvRegs       | Configures a transceivers registers or triggers a function offered by the receiver   |

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76528: [EthTrcv] Description of mandatory API "EthIf\_TrvcModeIndication" seem to be partly wrong

#### Problem description:

The description for the mandatory API "EthIf\_TrvcModeIndication" says:

"

...

Triggered by Eth\_SetTranceiverMode ...

...

"

I think this should changed to "Triggered by EthTrcv\_SetTranceiverMode"

#### Agreed solution:

Change API name in the description of EthIf\_TrvcModeIndication in requirement SWS\_EthTrcv\_00085

from ... Eth\_SetTranceiverMode ...

to ... EthTrcv\_SetTranceiverMode ...

Also change the description in the EthIf  
 ~SWS\_EthIf\_00232  
 –Last change on issue 76528 comment 2–

**BW-C-Level:**

| Application | Specification | Bus |
|-------------|---------------|-----|
| 1           | 1             | 1   |

- RfC #77250: [EthIf][EthSwt][EthTrcv] EthSwt\_SetSwitchPortMode() broken for ports without Ethernet transceiver

**Problem description:**

SWS\_EthSwt\_00019 states that EthSwt\_SetSwitchPortMode() shall (unconditionally) invoke EthTrcv\_SetTransceiverMode() of the Ethernet Transceiver Driver.

This is bogus for the following two reasons:

- 1) a particular switch port does not necessarily have an associated Ethernet transceiver. - In that case EthSwtPortTrcvRef won't be present. This is probably the case for MAC2MAC links if EthSwtPortRole is present and either set to ETHSWT\_HOST\_PORT or to ETHSWT\_UP\_LINK\_PORT.
- 2) Even if the particular switch port has an associated Ethernet transceiver, SWS\_EthTrcv\_00043 states that the EthTrcv shall invoke EthIf\_TrcvModeIndication() as a response to EthTrcv\_SetTransceiverMode().

IMHO 1) should be solved by extending SWS\_EthSwt\_00019 distinguishing between ports which are associated with a transceiver (i.e., EthSwtPortTrcvRef present) - in that case EthTrcv\_SetTransceiverMode() should be called - and ports which are not associated with a transceiver (i.e., EthSwtPortTrcvRef is not present) - in that case something else has to happen and this needs to be specified (probably the switch port shall be internally just disabled - maybe this needs to happen in the first case as well?)

2) leads to the following call chain: EthIf\_SwitchPortGroupRequestMode() -> EthSwt\_SetSwitchPortMode() -> EthTrcv\_SetTransceiverMode() -> EthIf\_TrcvModeIndication(). Thus the indication actually bypasses the EthSwt which IMHO is extremely ugly. Additionally for switch ports without associated transceiver, the EthIf will never get a EthIf\_TrcvModeIndication() ...

**Agreed solution:**

=== System Template ===

+ Add upstream mapping of EthSwtPortTrcvRef to CouplingPort.physicalLayerType

=== EthSwt ===

~ch. 7.2.4 Production Errors

move SWS\_EthSwT\_00113 to 7.2.5 Extended production Errors

~SWS\_EthSwT\_00113 change detection criteria to

Fail:When access to the Ethernet Switch fails the module shall report the extended production error with event status DEM\_EVENT\_STATUS\_PREFAILED to DEM.

Pass:When access to the Ethernet Switch succeeds the module shall report the extended production error with event status DEM\_EVENT\_STATUS\_PREPASSED to DEM.

+ SWS\_EthSwT\_XXXXX new ext. production Error

Error Name: ETHSWT\_E\_SYNCPORT2PHY

Short Description: Ethernet switch port and the referenced Ethernet transceiver are in contradicting modes.

Long description: While getting the Ethernet switch port mode, the Ethernet switch driver detected an inconsistent state between Ethernet switch port and the referenced Ethernet transceiver Mode.

Detection Criteria: Fail: When getting the Ethernet switch port mode together with the Ethernet transceiver mode and the mode of the two referenced modules was found

inconsistent the module shall report the extended production error with event status DEM\_EVENT\_STATUS\_PREFAILED to DEM.

Pass:When getting the Ethernet switch port mode together with the Ethernet transceiver mode and the mode of the two referenced modules was found

consistent the module shall report the extended production error with event status DEM\_EVENT\_STATUS\_PREPASSED to DEM.

all other attributer: N/A

~ ch. 8.3.2 EthSwT\_SwitchInit

~[SWS\_EthSwT\_00016] change "production error" to "extended production error"

~ch. 8.3.3 EthSwT\_SetSwitchPortMode

~[SWS\_EthSwT\_00019]The function EthSwT\_SetSwitchPortMode() shall put the indexed port of the switch into the specified mode. If EthSwTPort references an EthTrcv then the function EthTrcv\_SetTransceiverMode() of the Ethernet Transceiver Driver shall additionally be called with the corresponding transceiver mode.

+ [SWS\_EthSwT\_XXXXX] When calling the function EthSwT\_SetSwitchPortMode() with mode ETHTRCV\_MODE\_DOWN, the EthSwT shall disable the Ethernet switch port directly for reduction of power consumption, if it is possible.

+ [SWS\_EthSwT\_XXXXX] When calling the function EthSwT\_SetSwitchPortMode(), the

function shall check the access to the Ethernet switch driver. If the check fails, the function shall raise the extended production error ETHSWT\_E\_ACCESS and return E\_NOT\_OK, otherwise pass the extended production error ETHSWT\_E\_ACCESS and return E\_OK.

+ [SWS\_EthSwt\_XXXXXX] If EthSwtPort does not reference an EthTrcv, EthSwt shall indicate a mode of the port by the API EthIf\_SwitchPortModelIndication latest during the next EthSwt\_MainFunction. (SRS\_ETH\_00118)

~ch. 10.1.3 EthSwtDemEventParameterRefs

+ SWS Item ECUC\_EthSwt\_XXXXX1 : Name ETHSWT\_E\_SYNCPORT2PHY

Parent Container EthSwtDemEventParameterRefs

Description Reference to the DemEventParameter which shall be issued when the error "Ethernet switch port and the referenced Ethernet transceiver are in contradicting modes" has occurred.

Multiplicity 0..1

Type Symbolic name reference to [ DemEventParameter ]

Post-Build Variant Multiplicity true

Post-Build Variant Value true

Multiplicity Configuration

Class Pre-compile time X VARIANT-PRE-COMPILE

Link time X VARIANT-LINK-TIME

Post-build time X VARIANT-POST-BUILD

Value Configuration Class

Pre-compile time X VARIANT-PRE-COMPILE

Link time X VARIANT-LINK-TIME

Post-build time X VARIANT-POST-BUILD

Scope / Dependency

scope: local

~ch. 10.1.5 EthSwtPort

~ECUC\_EthSwt\_00041 EthSwtPortTrcvRef change following attributes:

Multiplicity Configuration Class | Link time | VARIANT-LINK-TIME, VARIANT-POST-BUILD

| Post build | –

add to dependency: If EthSwtPortPhysicalLayerType is defined, then EthSwtPortTrcvRef holds the reference to the corresponding EthTrcv.

~ECUC\_EthSwt\_00054 add dependency to EthSwtPortPhysicalLayerType: If a EthSwtPort has an EthSwtPortPhysicalLayerType then EthSwtPort shall reference an EthTrcv.

=== EthIf ===

Add to chapter 8.4 (callback notifications):

+ EthIf\_SwitchPortModeIndication

Syntax: void EthIf\_SwitchPortModeIndication( uint8 SwitchIdx, uint8 SwitchPortIdx, EthSwt\_ModeType PortMode)

Service ID: pick a free one

Sync/Async: Synchronous

Reentrancy: Non Reentrant

Parameters in: SwitchIdx: Index of the switch within the context of the Ethernet Switch Driver

SwitchPortIdx: Index of the port at the addressed switch

PortMode: notified Ethernet Switch port mode.

Description: The EthIf shall determine the expected notifications based on the EthSwtPort configuration. In case the EthSwtPort references an EthTrcv the EthIf expects a notification from the EthTrcv via API EthIf\_TrvcModeIndication(). Otherwise the EthIf expects a notification from the EthSwt via API EthIf\_SwitchPortModeIndication().

~SWS\_EthIf\_00232

change from

Called asynchronously when mode has been read out. Triggered by previous EthTrcv\_SetTransceiverMode call. Can directly be called within the trigger functions.

To

Called asynchronously when a mode change has been read out. If the function is triggered by previous call of

EthTrcv\_SetTransceiverMode it can directly be called within the trigger function.

–Last change on issue 77250 comment 50–

**BW-C-Level:**

| Application | Specification | Bus |
|-------------|---------------|-----|
| 1           | 4             | 1   |