

# Optional Type 2 Physical Layer Classification for Endspan PSEs

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List of Supporters

**IEEE 802.3at Task Force**

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**Chad Jones**

*Cisco*

# Relevant Comments in 33.2.7 Bucket

- **Comments 71, 117, 170, 180 and 201 address the requirement of the Endspan PSE to perform Type 2 PL Classification.**
- **Only comment 117 speaks against Type 2 PL Class being optional; the other four comments' suggested remedy support making T2PL optional.**

# Comment 71

CI 33	SC 2.7	P17	L32	# 71
Patoka, Martin		TI		
Comment Type	TR	Comment Status	X	33.2.7

"A Type 2 PSE shall perform classification using Type 2 hardware Physical Layer classification and may optionally perform link layer Data Link Layer classification."

We had a motion November 2006 that a type 2 PSE may choose its extension, which I interpret to mean that an endspan need only perform L2 class. This was recorded in the motion aggregator.

### *SuggestedRemedy*

An Type 2 endspan PSE must perform classification using Type 2 Physical Layer classification or Type 2 Data Link Layer classification. A midspan PSE must perform Type 2 Physical Layer classification.

- **Recommends requiring Endspan to use T2PL or DLLP.**

# Comment 170

<i>Cl</i> 33	<i>SC</i> 2.7	<i>P</i> 17	<i>L</i> 31	#	170
Law, David		3Com			
<i>Comment Type</i>	TR	<i>Comment Status</i>	D		33.2.7

The draft is in conflict with the following motions:

### *Suggested Remedy*

Update the draft as follows:

Subclause 33.2.7, page 31, line 31.

Change 'A Type 2 PSE shall perform classification using Type 2 Physical Layer classification and may optionally perform Data Link Layer classification.' to read 'A Type 2 Midspan PSE shall perform classification using Type 2 Physical Layer classification and may optionally perform Data Link Layer classification. A Type 2 Endpoint PSE shall perform classification using either Type 2 Physical Layer classification or Data Link Layer classification.'

- **Again, recommends requiring Endspan to use either T2PL or DLLP.**

# Comment 180

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<i>Cl</i> 33	<i>SC</i> 2.7	<i>P</i> 17	<i>L</i> 31	# 180
Schindler, Fred		Cisco Systems		
<i>Comment Type</i>	<b>TR</b>	<i>Comment Status</i>	<b>D</b>	33.2.7
A PSE does not have to perform Type 2 Physical Layer classification in order to ensure mutual identification with a type2 PD.				
<i>SuggestedRemedy</i>				
Replace the sentence on line 31 with:				
A Type 2 PSE shall perform type 2 Physical Layer classification and/or Data Link Layer classification.				

- **Recommends requiring Endspan to use T2PL and/or DLLP.**

# Comment 201

<i>Cl</i> 33	<i>SC</i> 2.7.2a	<i>P</i> 19	<i>L</i> 35	# 201
Schindler, Fred		Cisco Systems		
<i>Comment Type</i>	TR	<i>Comment Status</i>	D	33.2.7
A PSE can legally detect and power on a PD without classifying a PD. This allowance should continue.				
<i>SuggestedRemedy</i>				
Replace the sentence at line-34 with: If classification is not performed or the result of the first classification event is class 4, ...				

- **This comment points out that currently a PSE can legally detect and power a PD without classifying and asks for this allowance to continue.**

# Comment 117

CI 33 SC 2.7 P17 L35 # 117  
Darshan, Yair Microsemi Corporation  
Comment Type TR Comment Status D 33.2.7

Draft0.9:  
It is not clear from the text that A Type 2 PSE must do at least Type 1 Physical Layer classification in order to read Class 4 PDs that are Type 2 PDs by definition. Class 4 IS THE UNIQUE IDENTIFICATION MEANS as required by the 5 Criteria. Therefore:  
PSE Type 2 must do at least 1st finger Physical layer classification to read if it class 1,2,3 or 4.  
PSE Type 2 may omits the 2nd finger if it is using Layer 2 classification.  
A type 2 PDs must implement both Layer 2 AND Physical layer classification.

### *SuggestedRemedy*

Add the following text at line 35:

"Type 2 PSE shall implement at least one classification event of the Physical Layer Classification as per table 33-4a, to uniquely identify if PD is Type 1 or Type 2. Type 2 unique signature is Class 4 and represents PD max. Power.  
If PSE is equipped with Layer 2 classification, it may later communicate with PD type 2 for lower PD power requirements"

- **Recommends requiring Endspan to perform at least one T2PL classification event and optional DLLP.**

# Motions passed to date

## March 2006

The IEEE 802.3at Task Force affirms that a PD requiring more than 12.95W will support a Layer-1 Classification extension and a Layer-2 Classification mechanism. Endpoint PSEs must support Layer-2 classification or Layer-1 classification extension for PDs requiring more than 12.95W.

M: W. Diab S: F. Schindler

- **The motion clearly says ‘or’.**



# Motions passed to date

## July 2006

The P802.3at Task Force will use the 2-event L1 classification mechanism as shown on p.6 stanford\_1\_0706.pdf.

M: C. Stanford S: Y. Darshan

- **This motion adopts the two-event method but makes no claim of mandatory implementation.**

# Motions passed to date

## November 2006

### Simple Classification Baseline

#### PSE

- AT L2: Detects and classifies class 4. Communicates with PD in L2. Mutual ID achieved.
- AT L1: Detects and classifies class 4. Repeats classification (“dumb ping-pong”). Mutual ID achieved.
- AT PSEs shall choose the classification extension used.
- Legacy PSEs: Unchanged

The IEEE 802.3at Task Force adopts diab\_schindler\_1106\_1.pdf as the baseline for 802.3at classification as modified.

M: W. Diab S: F. Schindler

- **Bullet three clearly states AT PSEs choose which class method to use.**

# Do Endspan PSEs need to perform T2HL?

- **Currently a PSE can detect and power without classifying (assumes class 0)**
- **A T2 Endspan can power as class 0 and derives mutual ID from DLLP**

# Do Endspan PSEs need to perform T2HL?

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continued

- **A T2PD that has not detected a T2PSE shall assume T1PSE and power up under 12.95W**
- **In this case, the T2PD will derive mutual ID from DLLP negotiation.**

# Do Endspan PSEs need to perform T2HL?

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continued

- **Mutual ID does not have to be instantaneous.**
- **A user can't use PD until it boots, they can wait until after boot to discover it is underpowered.**

# Recommended Remedy for Comments

- **Recommend to Accept #170 and AIP #180 and #71 referring to #170**
- **Recommend Accept #201**
- **Recommend Reject #117 using this text:**

<i>Proposed Response</i>	<i>Response Status</i>
PROPOSED REJECT.	W

Class 4 is the unique identifier required for midspans and that is why PDs are required to display class 4, but an endspan PSE can choose to not class the PD at all and use L2 as the mutual identification method. Since PDs are required to do both, the outcome will be full power in both cases.

# Motion

**Motion text.**

**M: Chad Jones    S: second**

**All present; Y:    N:    A:**

**802.3;**