

# **LLDP-POE message response times**

**(Proposal to the IEEE 802.3at committee)**

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# LLDP-POE message response times

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**The LLDP-POE message response times and its validity in the IEEE POE spec is discussed**

# LLDP-POE message response times

**The following two conditions exist in the system where the LLDP-POE message response time is of interest**

- 1. The under power display indication time in AT PDs when connected to Type 1 PSE which cannot support power higher than 15.4W**
- 2. PD behavior or an application running on the PD which is sensitive to the time delay between the request for higher power and the PSE grant event**

# LLDP-POE message response times – PSE type indication

**Case 1: The under power display indication time in AT PDs when connected to Type 1 PSE which cannot support power higher than 15.4W**

1. This response time is a matter of user experience
2. The overall response time has 2 components
  - » PD processor boot up
  - » PSE turn around time LLDP POE messages
3. The 1<sup>st</sup> LLDP-POE message gets generated after the processor boots up, PHY initialization and the auto-negotiation cycle for link establishment. There may be other company specific security SW modules which has to go over the initialization procedures
4. Processor boot up does vary widely depending on the processor type, OS, flash speed, bus architecture etc.

# LLDP-POE message response times – PSE type indication

5. PDs should have the freedom to design slow or fast systems depending on the PD application, cost etc.
6. Any reasonable conservative Max value on the total response time of the visual indication of the PSE link partner type can be estimated which takes into account the run times of some of the tasks which are mentioned in the list.
  - This number will help the standard to address the interoperability issues

# Changes to the text before the ballot

**All 802.3at PDs will have visual indication to display the PSE type to which it is connected to**

## Recommended visual indication information

- Visual indication signaling that the PD is in the process of determining the PSE type
- Visual indication to differentiate AT PSE, AF PSE or failed to determine states

## Option 1:

- A maximum of 5 minutes from the time the power is applied to the completion of the identification of the PSY type, is a reasonable number in the spec.
- In this proposal the display behavior is not specified by the standard.

## Option 2:

- The display should start in less than 2 minutes after power being applied to the PD to indicate that the PD is in the process of determining the PSE type
- PD should complete the PSE type identification in less than 3 minutes

# LLDP-POE message response times – dynamic power request

## **Case 2: PD behavior or an application running on the PD which is sensitive to the time delay between the request for higher power and the PSE granting time**

- 1. This time response requirement is of importance to the application running on the PD**
- 2. This requirement will change over time and naturally will become tighter over PD in order to support time sensitive applications**
- 3. For such dynamic requirements Organization Specific TLVs can be used**
- 4. In order to address the interoperability in the standard a maximum X minutes should be included to address all the issues in the latency and processing delays in large switches**
- 5. The industry will address the issue designing to the faster response times for the application which need this**

# LLDP-POE message response times – dynamic power request

## Proposal :

- A PSE which has completed the boot up cycle should respond with a ACK or NACK LLDP-POE messages in less than 5 minutes after it receives the LLDP-POE message from the PD requesting for new power number.

**Note:** Delays due to SW upgrade, PSE standby power switch over etc..



# Changes to the text before the ballot

## Change 1:

**Proposed Change to propagate the link partner type information between PD and PSE. Required for under power indication.**

### Page 90 Table 33-22

power type Bits 7:6

1 1 = Type 1 PD

1 0 = Type 1 PSE

0 1 = Type 2 PD

0 0 = Type 2 PSE

**Table 33–22—Power type/source/priority field Bit Function Value/meaning**

power type 7:6

1 1 = Reserved

1 0 = Reserved

0 1 = PD

0 0 = PSE

# Proposed changes to the text before the ballot

## Proposal 1:

- A maximum of 5 minutes from the time the power is applied to the completion of the identification of the PSY type, is a reasonable number in the spec.
- In this proposal the display behavior is not specified by the standard.

## Proposal 2:

- A PSE which has completed the boot up cycle should respond with a ACK or NACK LLDP-POE messages in less than 5 minutes after it receives the LLDP-POE message from the PD requesting for new power number.

## Change 2:

Clause 33.7.5 , Page 92, Line 41 and Clause 33.7.5

Proposal: Change 1 second to 5 minutes.

## Change 3:

Clause 33.7.5 , Page 92, Line 49 and Clause 33.7.5 , Page 93, Line 2

Proposal: Change 1 second to 5 minutes.

## Change 4: (This has been discussed in the morning)

Clause 33.8, Page 101, Line 12

Proposal: Increase 1.25 seconds to 5 minutes.

**Propose that the adhoc recommend to the TF the following changes:**

**Change 1:**

**Clause 33.7.5 , Page 92, Line 41**

**Proposal: Change 1.25 seconds to 5 minutes.**

**Change 2:**

**Clause 33.7.5 , Page 92, Line 49**

**Proposal: Change 1 second to 5 minutes.**

**Change 3:**

**Clause 33.7.5 , Page 93, Line 2**

**Proposal: Change 1 second to 5 minutes.**

**Y:22**

**N:0**

**A:10**

**All in room: 39**

# Changes to the draft

Propose that the adhoc recommend to the TF the following changes:

## Page 90 Table 33-22

power type Bits 7:6

1 1 = Type 1 PD

1 0 = Type 1 PSE

0 1 = Type 2 PD

0 0 = Type 2 PSE

Motion: Ramesh      S: Randy

Y:25

N:0

A:2

All in room:

# Changes to the draft

Make the following changes:

## Page 90 Table 33-22

power type Bits 7:6

1 1 = Type 1 PD

1 0 = Type 1 PSE

0 1 = Type 2 PD

0 0 = Type 2 PSE

Motion: Ramesh      S: Randy

Y:23

N:0

A:3

All in room: