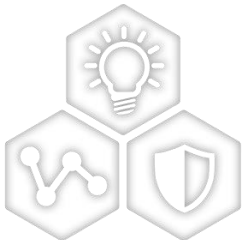# IEEE802.3da standard review

A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

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Comment 1: Table 189-1

Table 189–1—System power types

	30 V Max MPSE (Type 0)	50 V Max MPSE (Type 1)	Units
V_{MPSE} max	30	50	V
V_{MPSE} min	21.6	45	V
V_{MPD} min	16	35.5	V
I_{MPSE} min	1100	1760	mA
P_{MPSE} min	23.76	79.2	W
P_{MPD_1U} max	1.1	4	W

NOTE—Multiplying the minimum MPD voltage and current does not yield the required MPSE power because the power calculations for multidrop systems are not linear equations. As power is delivered to each MPD along the mixing segment, the current through the remaining portion of the mixing segment is reduced. In systems with fewer than 16 unit loads, values such as V_{MPD} and the power available to the MPD(s) will rise.

| Clause/Table	Issue	Suggested remedy	Notes
Table 189-1	It is not clear how some parameters in this table were derived? For example, our calculation based on 4 Ohm cable DC loop resistance and 17 mated connectors (and compensation components) with 150mOhm resistance provides different values for Vmpd_min and Impse_min. Another issue with cable + connectors resistance for Type 0 and 1. Type 0: (Vmpse_min-Vmpd_min)/Impse_min=(21.6V-16V)/1.1A=5.09 Ohm Type1:(Vmpse_min-Vmpd_min)/Impse_min=(45V-35.5V)/1.76A=5.39 Ohm Should be this values to be equal?	Provide Annex with example of mixing segments power calculation.	

Comment #2 : Table 189-8
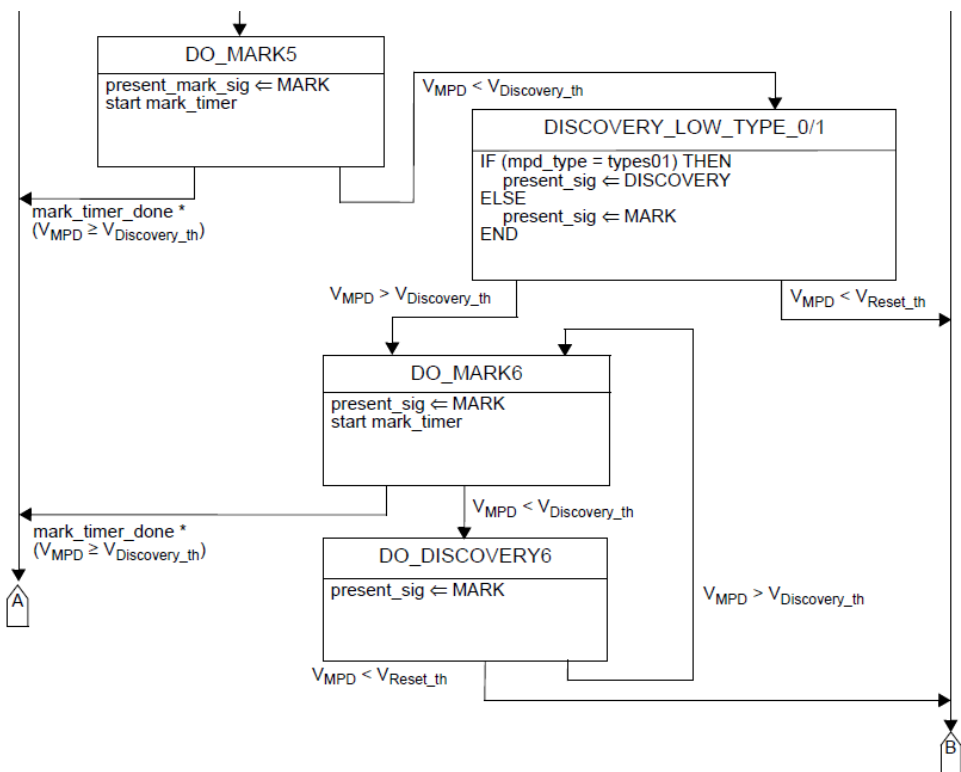
Figure 189–9—Top level MPD state diagram continued, part b

Table 189–8—MPD response to DISCOVERx events

DISCOVERx Event 1	DO_DISCOVERY1
DISCOVERx Event 2	DO_DISCOVERY2
DISCOVERx Event 3	DISCOVERY_LOW_TYPE_0
DISCOVERx Event 4	DISCOVERY_LOW_TYPE_1
DISCOVERx Event 5	DISCOVERY_LOW_TYPE_0/1

Discovery event:	1	2	3	4	5
Type 0	1	0	1	0	0
Type 1	1	0	0	1	0
Type 0/1	1	0	0	0	1

Clause/Table	Issue	Suggested remedy	Notes
Table 189-8	Flow chart on Fig 189-9 has 6 events of discovery however in a table 189-8 there are 5 events of discovery.	Make note to the table 189-8: Option 1: Discovery Event 6 does not add additional discovery information and could be used for future application. Option 2 (from Michael Paul presentation MPoE Discovery Extensibility) : Bit 6 =0 signals that the information was for T1M multidrop	

Comment #3

189.2 Mixing segment

The mixing segment consists of cable, nodes, and terminations (see Figure 189–1). 100 Ω terminations are connected at the ends of the mixing segment and must be AC coupled. The DC loop resistance of the cable (excluding connectors and attached devices) shall be less than or equal to 4 Ω.

This resistance budget is based on supporting up to 17 in-line nodes (1 MPSE and 16 MPDs). Each device, including mated connectors and compensation components, adds up to 150 mΩ to the loop resistance.

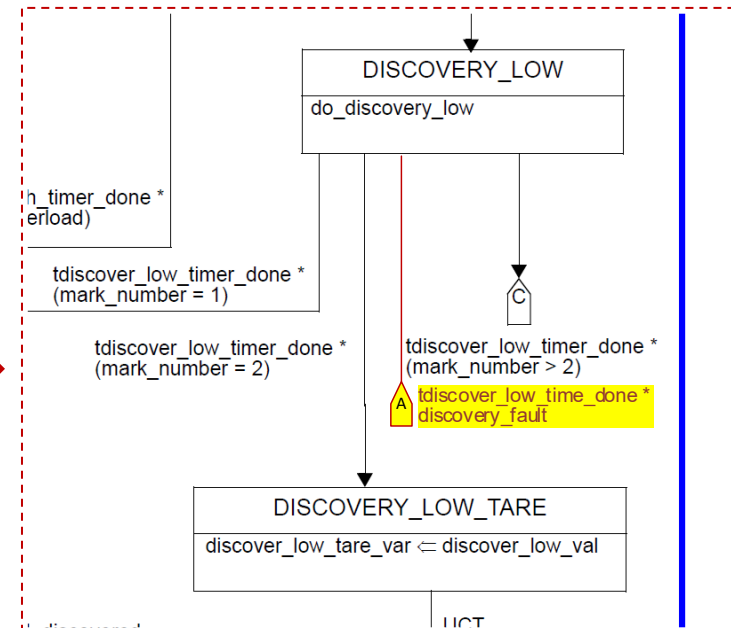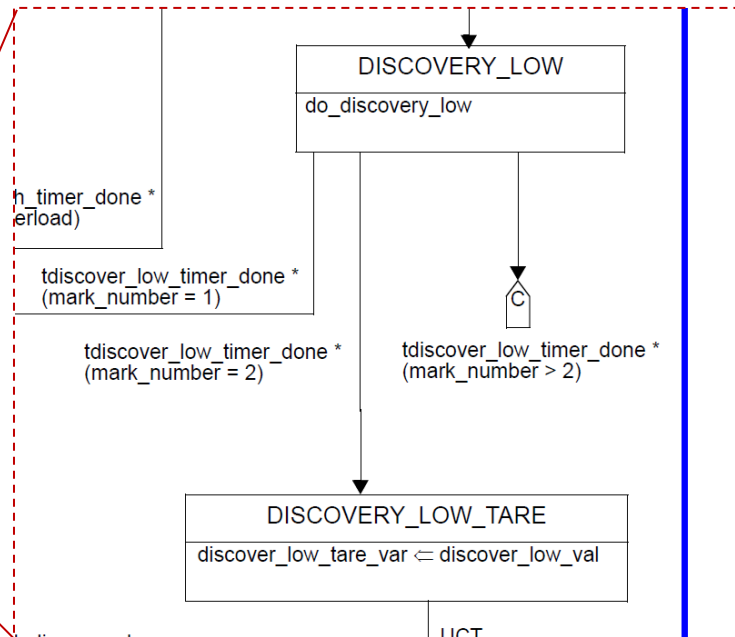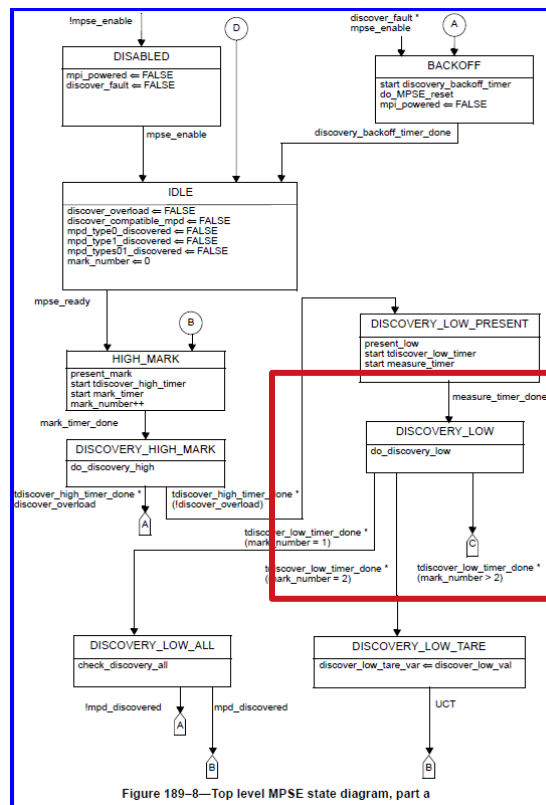| Clause/Table	Issue	Suggested remedy	Notes
Paragraph 189.2	Provide clarification for maximum resistance of cable and mated connectors.	Add sentence in the end of paragraph 189.2 Maximum overall DC loop resistance of cable and mated connectors (4 Ohm+ 17*0.15Ohm) is 6.55 Ohm.	

Comment #4

189.1 Overview

This clause defines the functional and electrical characteristics of two power entities for use with the 10BASE-T1M Physical Layer. The defined entities are an MPoE Powered Device (MPD) and an MPoE Power Sourcing Equipment (MPSE). These entities allow devices to draw or supply power using the same cabling that is used for data transmission. In conjunction with a 10BASE-T1M PHY, MPoE can provide an Ethernet Physical Layer device with an interface to both the power and data using only a single balanced pair of conductors as a shared medium. MPoE interfaces (MPIs) are normally may be associated with a DTE (e.g., a 10BASE-T1M TCI). A given DTE may have multiple associated MPIs The Multidrop Power Interface (see 189.1.3)MPI) serves as the mechanical and electrical interface between the MPSE or MPD and the power transmission medium. MPIs An MPI may be an MDI, or the MPI may also operate without be physically separate from the MDI. <mark>One or more MPSE(s)</mark> or one or more MPD(s) within an associated DTE MPI Group use LLDP to advertise their capabilities and status (see 189.1.3).

Clause/Table	Issue	Suggested remedy	Notes
Paragraph 189.1	"One or more MPSE(s)" statement should be clarified	Add a clarification in 189.1: "Only a single MPSE shall be connected to a data transmission line"	

Comment #5

Figure 189–8—Top level MPSE state diagram, part a

Clause/Table	Issue	Suggested remedy	Notes
Figure 189–8	Overload during DISCOVERY_LOW is not covered in the state-machine	Add an exit to "A" (backoff) from "DISCOVERY_LOW" if "discovery_fault" is received from "do_discovery_low"	