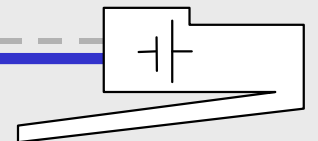


**Welcome**  
to the  
November 2000  
Plenary Meeting  
of the  
**802.3af DTE Power**  
**via**  
**MDI Task Force**  
Tampa, FL

Steve Carlson, Chair

November 6 - 9, 2000

**DTE Power via MDI TF**

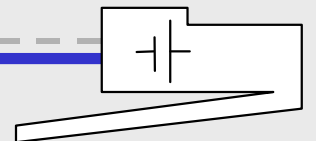


# Agenda

- Welcome and Introductions
- Select Recording Secretary
- Review / Approve Agenda
- Document Distribution
- E-mail Reflector, Web Site, and Miscellaneous Information
- Objectives for This Week
  - Consensus on discovery method
  - Create new timeline
  - Affirm votes in 802.3 WG
- Call for Patents

November 6 - 9, 2000

**DTE Power via MDI TF**

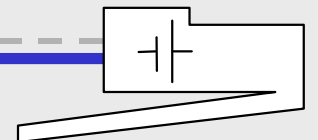


# Agenda

- Presentations related to Objectives
- Motions related to Objectives
- Other Presentations - Website: Rick Brooks - Nortel
  - IEEE 802.3af Criteria for Evaluating Detection
  - Signal Pair PD schematic
  - Signal Pair PSE schematic    Lucent/Avaya Resistive Prototype - Conducted, Radiated Emissions, ESD and Hipot
  - Nortel Coupled Diode Discovery Prototype - Radiated Emissions
  - Nortel Prototype Conducted Emissions of the 48V DC/ DC Power Supply
- Long Term Timeline (it's broken)
- New Business
- Plans for January Interim Meeting
- Approve Minutes of New Orleans Meeting
- Review New Action Items
- Adjourn

November 6 - 9, 2000

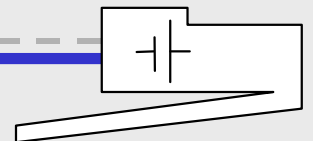
**DTE Power via MDI TF**



# Task Force Status

- PAR approved by NesCom (1/30/2000)

P802.3af (C/LM) Standard for Information Technology - Telecommunications and Information Exchange Between Systems - Local & Metropolitan Area Networks - Specific Requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications - Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)



# E-mail Reflector

The IEEE has set up a reflector for this study group:

[stds-802-3-pwrviamdi@mail.ieee.org](mailto:stds-802-3-pwrviamdi@mail.ieee.org)

The reflector can be used for announcements, comments, discussions, or dissemination of information related to the work of this study group

The reflector should not be used for recruiting, advertising, soliciting, flaming, whining, subscribing, or unsubscribing

To be added to the reflector, send an E- mail containing the following line:

**subscribe stds-802-3-pwrviamdi <your email address>**  
to

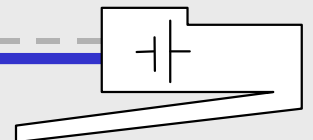
**majordomo@ mail.ieee.org**

To send a message to the DTE Power reflector use the email address:

**stds-802-3-pwrviamdi @ieee.org**

Subscriptions are on an individual basis only

No proxy requests or reflectors will be subscribed



# IEEE Web Site

**Typical Plenary Meeting Plan (DTE Power via MDI  
will meet during "Task Force" slots):**

<http://grouper.ieee.org/groups/802/3/plenary.html>

## **802.3af 5 Criteria:**

[http://grouper.ieee.org/groups/802/3/power\\_study/public/nov99/802.3af\\_5criteria.pdf](http://grouper.ieee.org/groups/802/3/power_study/public/nov99/802.3af_5criteria.pdf)

## **802.3af PAR:**

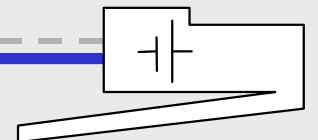
[http://grouper.ieee.org/groups/802/3/power\\_study/public/nov99/802.3af\\_PAR.pdf](http://grouper.ieee.org/groups/802/3/power_study/public/nov99/802.3af_PAR.pdf)

## **802.3 Voting Rules**

<http://grouper.ieee.org/groups/802/3/rules/member.html>

## **802.3 Patent Policy**

<http://grouper.ieee.org/groups/802/3/patent.html>



# IEEE 802.3 Requirements for Working Group Voting Membership

If you wish to vote on 802.3 standards at the Working Group Ballot stage you need to become a Voting Member of Working Group 802.3.

Membership is by **individual**, not company.

## To become a voter:

Attend and sign the attendance book at least **75% of the sessions of two Working Group 802.3 Plenary meetings (within the last four)**.

Full attendance at a **two day or more duly constituted Working Group 802.3 Interim Meeting can be substituted for attendance at one plenary**.

Have complete and current contact information recorded in the Working Group 802.3 database.

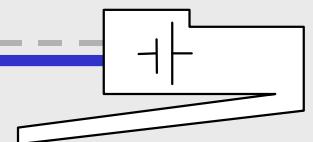
Request to become a voter during a Working Group 802.3 Opening or Closing plenary meeting when additions to the voter list are solicited by the Chair from the "Potential Voter" list.

## To remain a voter you must:

Maintain current contact information in the Working Group 802.3 database.

Have 75% attendance during at least two of the last four plenaries (Attendance at an interim can substitute for attendance at no more than 1 plenary).

Participate in Working Group ballots. You can be dropped for not returning or abstaining in two of the last three ballots.



# The Attendance Books

**SIGN "THE BOOK" EVERY DAY**

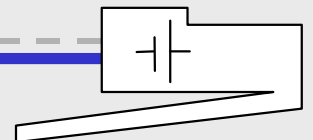
**KEEP IT MOVING**

**IF YOU ARE NEW, SIGN THE NEW-BEES BOOK**

**Put business card in back or fill out address...**

**Sign this book every day; no forward signing;  
do NOT sign for someone else!**

**DO NOT REMOVE THE BOOK FROM THE ROOM;  
DO NOT COPY THE BOOK**





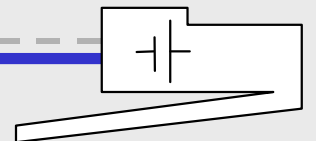
# Future Meetings

Interim Meeting - January 8 - 12, 2001 - Irvine, CA

Plenary Meeting - March 12 - 15, Hyatt Regency, Hilton Head, SC

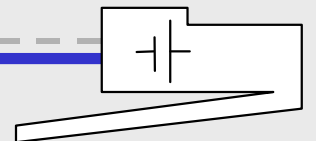
Other plenary meetings can be found in:

<http://grouper.ieee.org/groups/802/meeting/future.pdf>



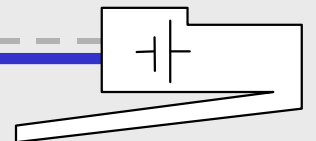
# Objectives for this Meeting

- “Discovery” decision - we’re out of time!
- Review status
- Create new long-term timeline
- Create work plan to make up for lost time
- Charter editor for new draft
- Plan for Interim in January
- Affirm TF votes within 802.3 WG



# Presentation Guidelines

- Requests for presentation time should be scheduled with the chair one week prior to the meeting
- Presentations should be supplied via e-mail as a PDF file one week before the meeting
- Avoid fussy backgrounds or other decorative graphics
- No animations, video clips, etc.
- Goal: to keep the PDF small enough to fit on a single floppy disk
- You must attend one meeting prior to presenting

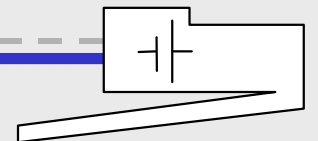


# Short-Term Schedule

- July Plenary
  - 1st. Draft
- September Interim
  - Last new feature
- November Plenary
  - Last chance!!
- January
  - Task Force Ballot

November 6 - 9, 2000

**DTE Power via MDI TF**



# DTE Power Objectives

November 10, 1999 as approved by DTE Power via MDI SG.

(1) Economically provide power over a twisted- pair link segment to a single Ethernet device. To be included:

10BASE- T,  
100BASE- TX.

To be considered:

1000BASE- T.

(2) Select one power distribution technique for world- wide use

(3) Not cause damage and interoperate with compliant RJ- 45 MDI Ethernet devices including:

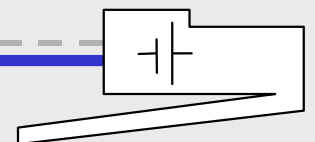
a. Switch- to- switch connections (both supplying power)

b. Cross- over cables

c. Common mode termination implementations

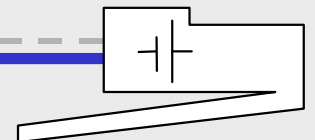
d. Shorted conductors, pairs or loop- back plug

(4) Define a capability detection function that works with a powered and an unpowered device



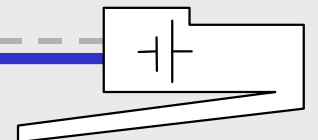
# DTE Power Objectives

- (5) Select the voltage, minimum and maximum current and wattage to be supplied
- (6) Add appropriate management objects for power capability and status
- (7) Support current standard, 4- pair, horizontal cabling infrastructure for installed  
Cat 3 and Cat 5 cabling
- (8) Preserve the signal transmission and isolation characteristics of existing equipment and cabling
- (9) Maintain normal functionality of Link Integrity Test function in legacy and new devices
- (10) Consider mid- span power insertion, powering over the signal pairs, and interaction with other RJ- 45 interfaces: Token Ring, ATM, FDDI TP- PMD, 1000BASE- T, ISDN, networking test equipment, PBX, IEEE 1394, devices listed in ISO/ IEC 11801 : 1995 Annex G



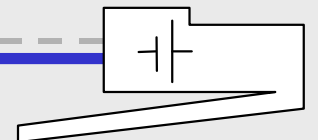
# Decision List

- Maximum Voltage (Objective 5)
- Maximum and minimum current (Objective 5)
- Are classifications required, and (if so) how many (Objective 6)
- Detection to be made on same pair as power
- Which pair(s)? (Objective 7)
- What level of support for 2-pair legacy systems (Objective 7)
- Level of support for 1000BASE-T (Objectives 1 & 9)
- Determine fault behavior



# Decision List

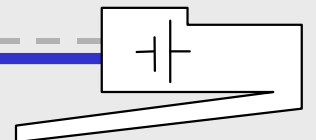
- Determine type of discovery mechanism
- Single or multi-tiered discovery mechanism
- Of the known RJ-45 devices can we determine which can we live with?
- Should we define a standard means to provide optional visual indications of the ability to supply power from a connector and/or is it currently providing power?
- Maximum voltage not to exceed SELV IEC 950





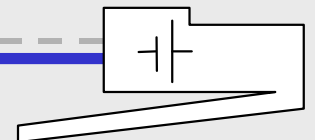
# 802.3af Requirements

- Without specifying the two and only two pairs to be utilized for DTE power, DTE power shall utilize two pair powering where each wire in the pair is at the same nominal potential and the power supply potential is between the two pairs selected. - January 2000 Interim
- Regardless of the detection scheme adopted and the power feed scheme adopted, the power detection and power feed shall operate on the same set of pairs. - January 2000 Interim
- Regardless of the final voltage selected, the DTE power max voltage shall not exceed the limits of SELV per IEC 950. - January 2000 Interim
- In order to progress we accept that there are two isolation requirements of 802.3, environment A and B per 802.3 section 27.5.3 et al, and that for the purposes of this committee we will treat as a priority for consideration environment B without precluding environment A. - March 2000 Plenary



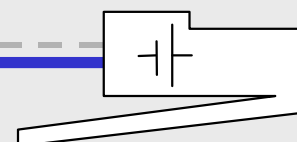
# 802.3af Requirements

- For DC systems the minimum output voltage of the source equipment power supply shall be at least 40VDC. - March 2000 Plenary
- For DC systems, the source device shall be capable of supplying a minimum current of at least 300mA per port. - March 2000 Plenary
- The solution for DTE Powering shall support mid-span insertion of the power source. - March 2000 Plenary
- 802.3af systems shall distribute DC Power - May 2000 Interim
- If both pair sets may be used for powering, midspan shall supply power on 45,78 - Supplying power on pins 12,36 from the midspan is for a later revision of the standard. - May 2000 Interim
- 802.3af proceed with the development of a low frequency, low energy common mode detection method. - May 2000 Interim
- That it be an objective of the 802.3af task force to determine the optimal method to apply power at the "mid-span" and "DCE end" to minimize data-path impairments at a reasonable cost. -May 2000 Interim



# 802.3af Requirements

- 802.3af systems shall distribute DC Power - May 2000 Interim
- If both pair sets may be used for powering, midspan shall supply power on 45,78 - Supplying power on pins 12,36 from the midspan is for a later revision of the standard. - May 2000 Interim
- 802.3af proceed with the development of a low frequency, low energy common mode detection method. - May 2000 Interim
- That it be an objective of the 802.3af task force to determine the optimal method to apply power at the "mid-span" and "DCE end" to minimize data-path impairments at a reasonable cost. -May 2000 Interim
- We accept the powering of the DTE via either sets of wire pairs (1-2, 3-6 and 4-5, 7-8), in anticipation the detailed technical and economic feasibility of each having been shown prior to the Working Group Ballot. - May 2000 Interim



# Presentations

"UTP Cable Modes," Rick Brooks, Nortel Networks

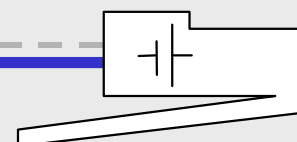
"How Much Noise is too Much ?," Rick Brooks, Nortel Networks

"Detection Methods - Reliability Analysis," Yair Darshan, PowerDsine

"Resistive Signature and Detection Summary and Feasibility,"  
Robert Leonowich, Lucent Technologies, Don Stewart, AVAYA

"Resistor Signature Analysis," Dieter Knollman,  
AVAYA

"Coupled Diode Discovery, It Works," Rick Brooks, Nortel Networks



# Presentations

"PHY Support for Diode Discovery Cost Analysis," Kevin Brown, Broadcom

"Power Level Detection," Robert Muir, Intel

"DTE Power differential noise and common-mode voltage requirements," Terry Cobb, Lucent/AVAYA

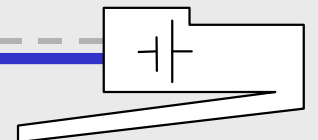
"DC Requirements for Wire and Cable from Industry Standards," Sterling Vaden, Superior Modular Products

"A Solution to Environment B Power," Paul Moore, Mike Edwards Nortel Networks

"DTE power via MDI management strawman proposal," Nick Stapleton, 3Com

November 6 - 9, 2000

**DTE Power via MDI TF**

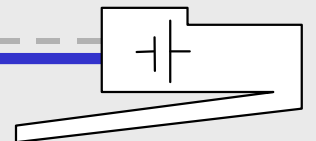


# Presentations

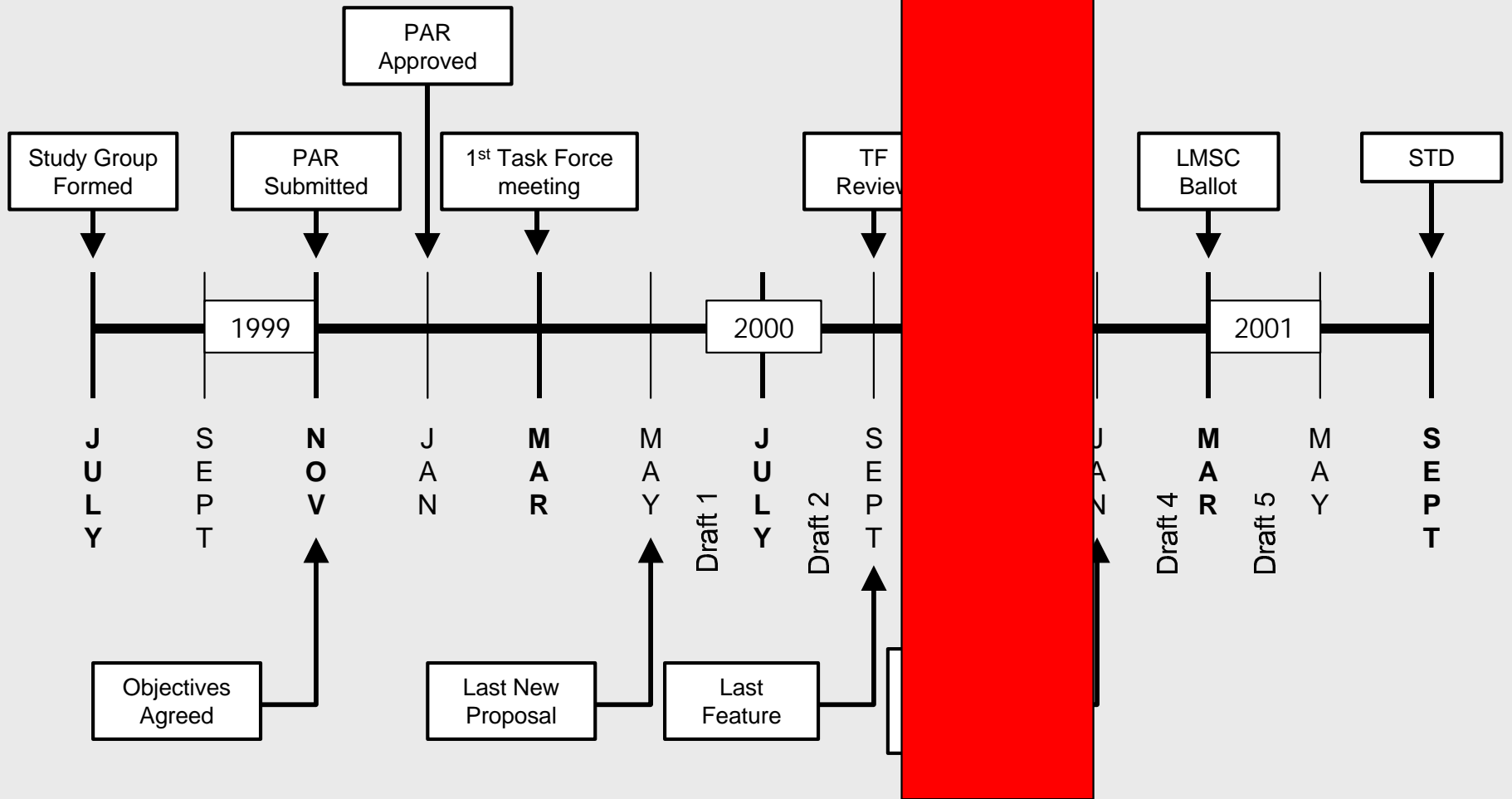
“Draft Power Supply Specification Submission,” Arlan Anderson, Nortel Networks

November 6 - 9, 2000

**DTE Power via MDI TF**

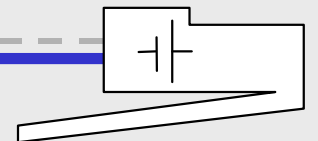


# Long Term Schedule



November 6 - 9, 2000

DTE Power via MDI TF



# Other Business

- New Business
- Plans for January Interim
- Approve Minutes of September Meeting
- Review New Action Items
- Adjourn

November 6 - 9, 2000

**DTE Power via MDI TF**

