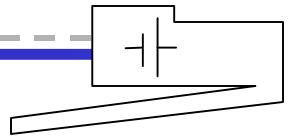
Welcome

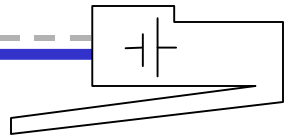
to the
March 2000
Plenary Meeting
of the
802.3af DTE Power
via
MDI Task Force
Albuquerque, NM

Steve Carlson, Chair



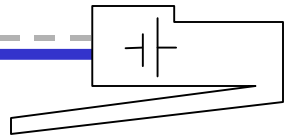
Agenda

- Welcome and Introductions
- Select Recording Secretary
- Review / Approve Agenda
- Document Distribution
- E-mail Reflector, Web Site, and Miscellaneous Information
- Objectives for This Week
  - Decide on Voltage, Current, Powering technique
  - Continue to Define Problem Space / Constraints
  - Compare Ideas Vs Objectives
- Call for Patents



Agenda

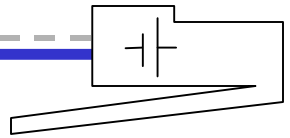
- Presentations related to Objectives (Define Problem Space / Constraints)
- Motions related to Objectives
- Other Presentations
- Strawman Long Term Timeline
- New Business
- Plans for May Interim Meeting
- Approve Minutes of Dallas Meeting
- Review New Action Items
- Adjourn



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

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

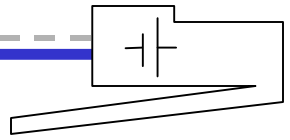
majordomo@ mail.ieee.org

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

802.3af PAR:

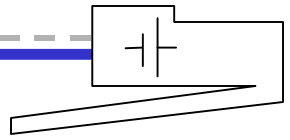
http://grouper.ieee.org/groups/802/3/power_study /public/nov99/802.3af_PAR.pdf

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.

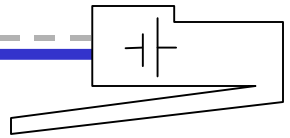
Request to become a voter during a Working Group 802.3 Opening or Closing plenary meeting when additions to the voter list are solicited by the Chair from the "Potential Voter" list.

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

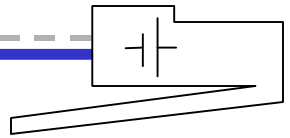
KEEP IT MOVING

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 REMOVE THE BOOK FROM THE ROOM;

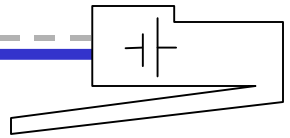
DO NOT COPY THE BOOK



Future Meetings

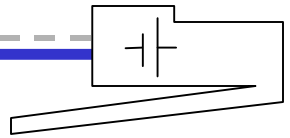
Interim Meeting - May 22-26 - Westin Hotel, Ottawa, Canada
Plenary Meeting - July 10 -14 - Hyatt Regency, La Jolla, CA

Other plenary meetings can be found in:
http://grouper.ieee.org/groups/802/meeting/future.pdf



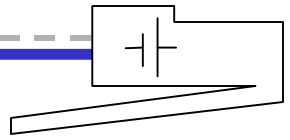
Objectives for this Meeting

- Priority One
  - Continue to define the constraints
  - Map possible solutions against the constraints
  - Make decision on voltage, current levels based upon data
  - Decide on powering technique and pair usage
  - Decide on discovery mechanism



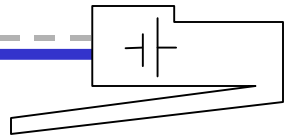
Presentation Guidelines

- Requests for presentation time should be scheduled with the chair two weeks prior to the meeting
- Presentations should be supplied via e-mail as a PDF file on 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



Short-Term Schedule

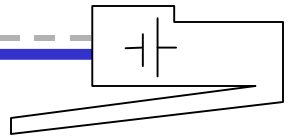
- March Plenary, Albuquerque
  - First official meeting of the Task Force
- May Interim, Ottawa
  - Last new proposal accepted
- July Plenary
  - 1st. Draft



DTE Power Objectives

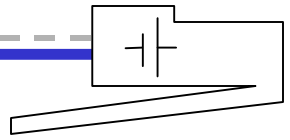
November 10, 1999 as approved by DTE Power via MDI SG.

(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



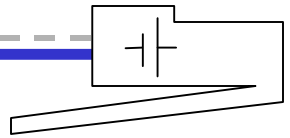
DTE Power Objectives

(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



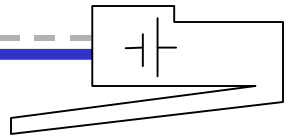
Decision List

- 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



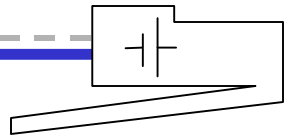
Decision List

- 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?
- Level of support for mid-span insertion
- AC or DC
- 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



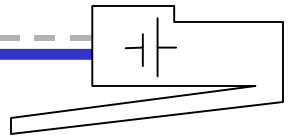
Action Items

- New
  - Contact Telecom Department at Texas A&M relative to the availability of wiring pairs at the desktop there and through the wiring industry group, determine a feel for the availability generally. Geoff Thompson of Nortel.
  - Strawman power supply specification which contains all critical parameters for consideration. Larry Spaziani, Texas Instruments.



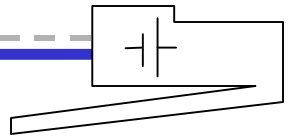
Action Items

- New
  - Determine the international limits for voltage/etc. safety and loop resistance limits - Geoff Thompson of Nortel
  - Set up a real test environment with an active load to determine the error characteristics of the MDI in relationship with the TIA cable spec. - Karl Nakamura, Cisco Systems; Mike Nootbaar of TDK.



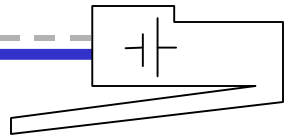
Action Items

- New
  - Isolation relative to 802.3, Telephony, Regulatory/Safety requirements. Dave Law of 3COM, Bob Bell of Cisco Systems.
  - Study the effect of AC on the MDI. Mike Nootbaar of TDK.
  - Provide experimental data on mid-span insertion on the signal pairs. (National Twister transceiver) Roger Karam, Cisco Systems.



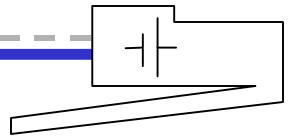
Conclusions

- Power will be supplied on either the idle pair or the data pair but not both
- The maximum voltage will be 60V DC (SELV)
- The discovery process must be robust in normal and under fault conditions
- Discovery must operate on the same pairs as the discovery process
- Maintain the differential characteristics of the link to minimize connector imbalance
- Power requirements are 8W min., 15W max.



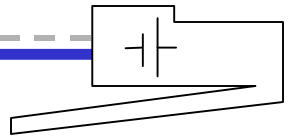
Presentations

- “Isolation Issues,” Scott Burton, Mitel
- “Patch Panel/Outlet/Cable Current Considerations”, John Kee, Robert Leonowich, Lucent
- “DTE Power Supply Options”, Scott Burton, Mitel
- “BER Performance with Dynamic Loads”, Mike Nootbaar, TDK Semiconductor
- “Considerations of Mid-Span Power Insertion”, Nariman Yousefi, Vafa Rakshani, Kevin Brown, Broadcom



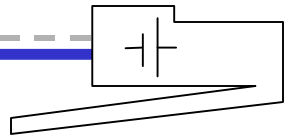
Presentations

- “DTE Power Detection Algorithm”, Nariman Yousefi, Vafa Rakshani, Kevin Brown, Broadcom
- “Proposal for a discovery process”, G. Vergnaud, R. Gass, ALCATEL
- “DTE Power via MDI Detection and Signature Guidelines”, Richard Glaser, John Jetzt,Dieter Knollman,Robert Leonowich, Lucent
- “DC Power Discovery Algorithm”, Phil Holland, Circa



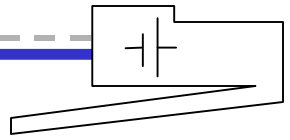
Presentations

- “Connector Update”, Elwood Parsons, Tyco Electronics
- “ DTE Power System Considerations“, Arlan Anderson, Nortel Networks
- “IDLE PAIR Discovery Process”, Robert Muir, Level One
- “Power Over Ethernet Customer Requirements”, Dave ,3Com
- “Voltage and Current Issues”, Mike McCormack, 3Com

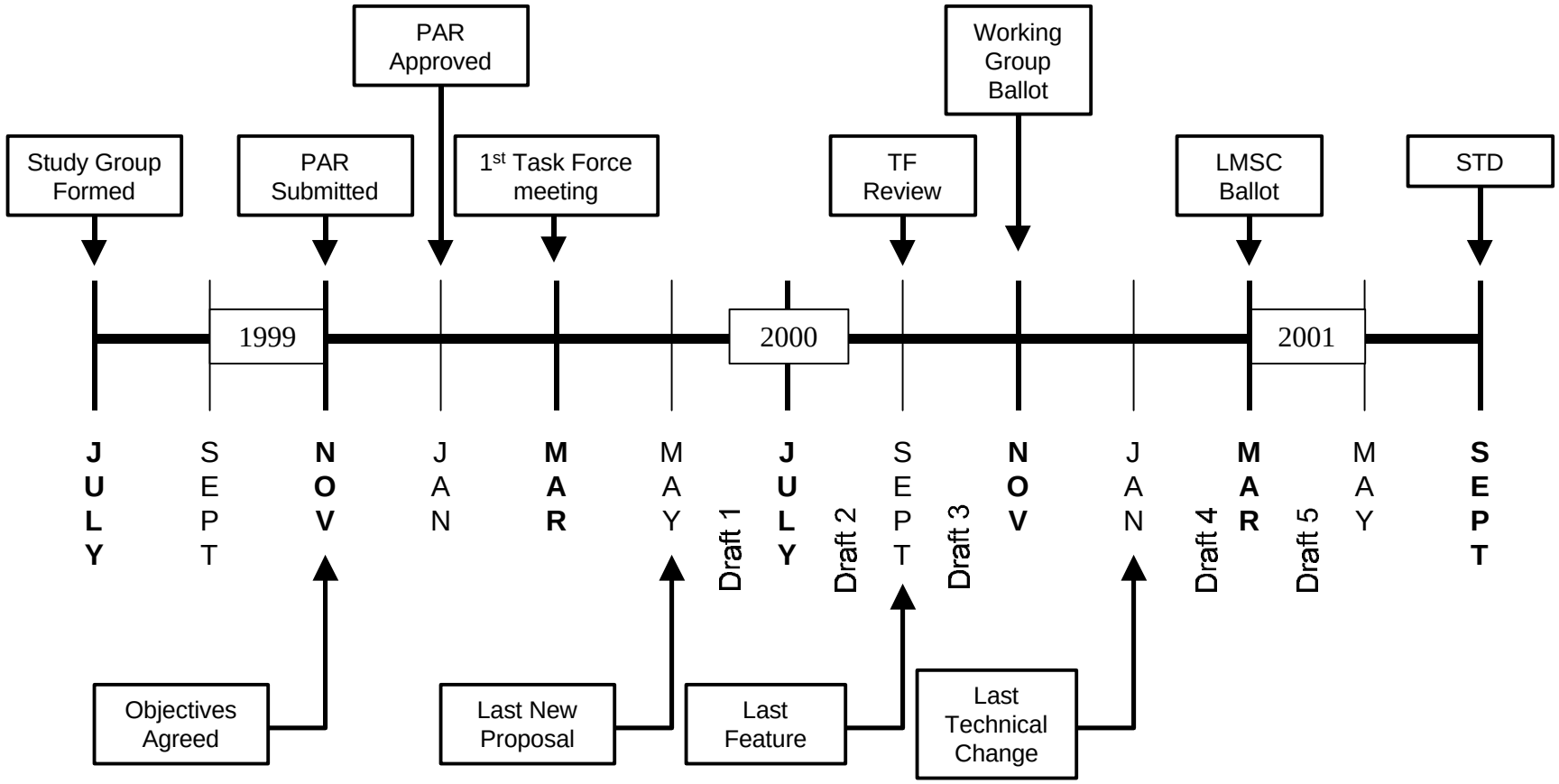


Presentations

- “PDTE Detection Mechanism”, Amir Lehr, PowerDsine
- “Preliminary Simulation Results of the Diode Detection Method ”, Dan Dove, H-P
- “Power Over the Signal Pairs”, Mike Nootbaar, TDK Semiconductor
- “A Case for Maintaining Future Flexibility”, Bob Bell, CISCO Systems



Long Term Schedule



Other Business

- New Business
- Plans for May Meeting
- Approve Minutes of Dallas Meeting
- Review New Action Items
- Adjourn