Minutes of the Power via the MDI Task Force
Interim Meeting, May 24-25
Ottawa, Canada

The Meeting was called to order by Steve Carlson, chairman at 8:45 am, May 24, 2000. Steve Buck, TDK was asked to be recording secretary for this meeting. The first Item was a statement of the objectives for week

- 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

It was noted that there were a number of new participants (about 20 or 30%).

The agenda was presented to the group, no changes to the agenda were presented. The agenda included the following administrative items:

Task Force Status
Par approved by NESCOM 1/00
Details of the E-mail reflector
Discussion on the use of reflector (e.g. no flaming)
Discussion of Working Group voting membership rules
Future Meetings:
    Plenary July 10-14 La Jolla, Ca.
    Interim – September 11-14, Boston, Mass.
Statement of Objectives
Presentation guidelines
Short Term Schedule
Task force Objectives

The Agenda and Opening remarks are posted separately to the Website.

This was followed by a short discussion of the decision list (a list of outstanding questions to be answered by the group and a review of the requirements 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
- 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

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
- 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

Scheduled Presentation List
Presentations resulting from motions or other discussions are included within the minutes.

- **"Basic Methods for DTE Power Delivery", Ed Walker, TI**
- **"ISOLATION CONSIDERATIONS for MDI POWER SOURCES and MDI-POWERED DTE", John Jetzt, Donald Stewart, Lucent**
- **"Common Mode and Differential Mode Discovery Techniques," Rick Brooks, Nortel**
- **"Update on the Diode Discovery Process," Robert Muir, Level One**
- **"IEEE 802.3 DTE Power via MDI Detection and Signature Protocol," Richard Glaser, John Jetzt, Dieter Knollman, Robert Leonowich, Donald Stewart, Lucent**
- **"Proposal for Consensus," Ralph Andersson, TDK**
- **"Cabling from the User Perspective," Bob Love, Dave Kooistra, IBM**
- **"DTE Power at the Endpoint," Karl Nakamura, Cisco**
- **"Phone Discovery at the Mid-Span, Karl Nakamura, Cisco**
- **"DTE power via MDI, An Alternative Proposal," Hans Sitte, Aligent**
- **"Insertion and Return Loss with Mid-Span Insertion," Mike Nootbar, TDK**
- **"Transformer Coupling at the Mid-Span," Kevin Brown, Broadcom**
- **"DTE Power via MDI, G. Vergnaud, R. Gass, ALCATEL**
- **"Powering and Discovery Alternatives," Arlan Anderson, Nortel**

Motion to approve agenda
Moved: Mike McCormack
Second Bill. Quackenbush
Approved by acclimation

1st Presentation - Basic Methods for DTE Power Delivery
Ed Walker, TI Analog Field Applications.

Break
Meeting resumed at 10:30AM

Presentation - Isolation Considerations -John Jetzt, Donald Stuart, Lucent

Presentation - Common Mode and Differential Discovery Techniques - Rick Brooks, Nortel

Lunch Break
Meeting resumed at 1:15 PM

Presentation - Update on Diode Discovery Process - Robert Muir, Level One

Presentation - Detection and Signature Protocol - Bob Leonowich , Richard Glaser et al., Lucent

Break
Meeting resumed at 3:10PM

Geoff Thompson made a short speech on IEEE Patent Policy. The new IEEE policy now requests a letter disclosing patents a head of time, not after a standard is approved

Presentation - TR42.1 Liaison report - Chris Dominico
TR42 has set up a task group to answer the questions from IEEE 802.3

Presentation - DTE Power over MDI - Building Consensus - Ralph Andersson, TDK Semiconductor

Presentation - User requirements for Cabling Support - Robert Love, LAN Connect Consultants, Dave Kooistra, IBM

Presentation - Power over the MDI - Karl Nakamura, Roger Karam, Cisco Systems

Presentation - Power over the MDI using the two signal pairs - Karl Nakamura, Roger Karam, Cisco Systems

Motion to adjourn: McCormack Time: 5:24PM
Second: Quakenbush
Approved by acclimation

Thursday May 25, 2000

The Meeting was called to order by Steve Carlson, chairman at 8:30AM, May 25, 2000

Presentation - DTE Power via the MDI, an Alternative Proposal - Hans Sitte, Agilent

Presentation - Return Loss with Mid-span - Mike Nootbaar, TDK Semiconductor

Presentation - Mid span Insertion using Transformer coupling - Kevin Brown, Broadcom

Break
Meeting resumed at 10:10AM

Presentation - DTE Power via the MDI - G. Vergnaud, R. Gass, R. Jaeger, Alcatel

Presentation - Consideration in selecting feeding voltage/current Amir Lehr, Yair Darshan, Avinoam, Levy - PowerDsine

Presentation - Powering and discovery Alternatives - Arlan Anderson, Nortel

Presentation - Proposal to Move forward - Chris Cullin – Cisco Systems

Presentation - Consensus Proposal for DTE power via the MDI - Dan Dove, HP

Lunch Break
Meeting resumed at 1:20PM

Motion 1: All technical motions which are passed from this time forward, unless specifically excluded in the wording of the motion shall be incorporated into the document entitled 802.3 requirements which was created at the March Plenary. The editor is to maintain this document and update it within one week of the end of the meeting

Moved: Michael McCormack
Second: Arlen Anderson
Technical: Not Procedural
Y:44 N:0 A:2 Time: 1:25PM
Motion Passes

Motion 2: The standard for DTE power distribution will use pairs associated with pins 4-5, and 7-8 as the primary pairs for distributing power over the MDI.

Moved: Mike Nootbaar
Second: Amir Lehr
Technical: Yes 75%
Y: 32 N: 14 A: 6 Time:2:11
Motion Fails

Motion to table this motion until after Dan Dove Presentation. Yes:24 No:14 Time: 1:30
Motion Passes

Motion 3: It is an objective that the DTE shall be required to accept power from both the 12,36 and the 45,78 pair-sets with the requirement that those pair-sets both use the same method of detection.

Moved: Dan Dove
Second: Robert Love
Technical: yes 75%
Y: 27 N: 21 A: 6 Time:2:03PM
Motion Fails

Motion 4: 802.3af systems shall distribute DC Power
Moved: Michael McCormack
Second: Bill Quackenbush
Technical: yes 75%
Y: 53 N: 0 A: 2 Time: 2:15PM
Motion Passes

Motion 5: Move it is an objective to come up with one and only one discovery method.
Moved: Robert Love
Second: Robert Muir
Technical: yes 75%
Y: 31 N: 11 A: 7 Time: 2:32

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