IEEE 802.5 Committee
November 11th-15th, 1996
Vancouver, BC
Meeting 'BB'

Neil Jarvis, Recording Secretary (Acting)
Proteon International Ltd, R'n'D, York, UK

Revision History		
v1.0	19 Nov 96	Initial release
v1.1	21 Nov 96	Fixed VLAN tagging vote and fixed URL reference.

Attendees

Full Time

Mike Hanrahan
Neil Jarvis
George Lin
Bob Love
John Messenger
Syou-Chin Peng
Bob Ross
Steve Scandalis
Mike Siegel
Trevor Warwick
Ken Wilson
Ed Wong

Part Time

Ameesh Divatia
Paul Gessert
Kirk Preiss
Bill Sarles
Alistair Swales
Rosemary Slager

Meeting Agenda

Monday, Nov 11th

8:30am	Noon	Editors Available for Comment Resolution
Noon	1:00pm	Lunch
1:00pm	3:15pm	802 Opening Plenary
3:30pm	5:00pm	802.5 Opening Plenary, including:

- Election of Vice Chair, Recording Secretary
- Status Of Ballots
- Status of High Speed Token Ring Study Group, Develop Plan of Action
- New Business
  - 802 Plenary Locations
  - VLAN Tagging

Tuesday, Nov 12th

8:30am	10:00am	VLAN Tagging
10:00am	Noon	Comment Resolution, DTR, 802.5s, Preparation of Next Drafts
Noon	1:00pm	Lunch
1:00pm	5:00pm	Comment Resolution, DTR, 802.5s, Preparation of Next Drafts

Wednesday, Nov 13th

8:30am	Noon	802.1 Open Plenary
Noon	1:00pm	Lunch
1:00pm	5:00pm	Comment Resolution / New Business

Thursday, Nov 14th

8:30am	9:10am	Finish comment resolution on 802.5r
9:10am	9:15am	802.5 Closing Plenary
		Approve agenda
		Approval of Meeting AA minutes
		Approval of Meeting aa minutes
9:15am	9:30am	802.5j Ballot Status
9:30am	10:00am	802.1 Liaison Report (John Messenger)
10:00am	10:30am	Break
10:30am	11:15am	802.5r Ballot Status
11:15am	11:45am	802.5s Ballot Status
11:45am	Noon	Token Ring MII Study Group (TRMSG)
		Interim meeting decision
		WWW Site
		New Business
Noon	1:00pm	Lunch
1:00pm	5:00pm	Open
7:00pm	Midnight	802 Executive Meeting

Friday, Nov 15th

8:00am	10:00am	802 Closing Plenary

Detailed Meeting Minutes

802.5 Opening Plenary

Elections for vice-chair were held. Mick Hanrahan was the sole nominee and was elected unanimously. The position of Recording Secretary is still open. Neil Jarvis volunteered to perform the task for this meeting.

The question was raised as to what would be the criteria for causing Draft 7 of the DTR standard to go for another confirmation ballot. Jim Carlo has stated that if the Draft 6 to Draft 7 changes would cause an implementer to change their product, then a confirmation ballot would be required. The committee will need to review the changes made by comment resolution at this meeting to decide if a conformation ballot is appropriate.

802.5s Draft 2.0 ballot closed successfully, with three open issues. These are CORR=UNK_VALUE optional-x transitions in the Station Operation Tables, Annex A clarification and an Annex P implementation question.

802.5j Draft 5.0 is going forward to LMSC ballot.

The High Speed Token Ring Study Group has gone dormant. With the IBM announcement that they would not be developing any products, a number of other companies (including Olicom, who made a presentation at the last study group meeting) have also expressed that they are no longer interested in the work. When requesting a PAR, five criteria must be met, one of which is Broad Market Potential. The withdrawal of interest from a number of manufacturers means this criteria is no longer met, and the PAR application will not go forward.

The committee felt that the 802 plenary meeting locations chosen for 1998, being both on the west coast, unfairly penalised European participants. The feeling was that an alternating east/west venue has always been the 802 way. A motion passed (BB1), that expresses the committee's wish to see alternating venues be reinstated in 1999. This will be presented by Bob Love to the executive committee.

John Messenger re-presented his liaison report from the Ottawa 802.1 Interim meeting [*Paper 11-20*]. Kirk Preiss quickly ran through his proposed VLAN tagging scheme for 802.5. This appeared to have a number of technical inconsistencies, and Mike Siegel volunteered to rewrite the presentation. VLAN tagging was on the agenda for 802.5 committee discussion.

VLAN Tagging

Mike Siegel gave his VLAN Tagging presentation [*Paper 11-21*]. He restated the three options for tagging,

- SNAP Encoded VPID
- VLAN LSAP
- Using reserved Frame Control bits

He recommended the use of a unique LSAP for VLAN tagged frames. This had low latency, while maintaining compatibility with legacy equipment:

Octets	1	1	1	6	6	0-30	**1**	**1**	**1**	**2**	n	4	1
Fields	SD	AC	FC	DA	SA	RIF	**VLSAP**	**VLSAP**	**Ctrl**	**VID**	Encapsulated Frame	FCS	ED

VLSAP: VLAN LSAP. To be assigned.
Ctrl: LLC Control field value.
VID: VLAN tagging: Priority (3 bits), TR-encap (1 bit), VLAN ID (12 bits).
Encapsulated Frame: As described in 802.1q Draft 2

Odd/Even byte padding could be added to this scheme, by either using a 2 byte LLC control field, or simply by adding a pad byte after the Ctrl field. After some discussion, it was felt that the extra padding byte would not add enough value, for the inclusion of extra latency.

Some members of the FDDI community joined the discussion, in the hope that the two committees could agree to a single VLAN tagging scheme to be used on both media.

FDDI has a problem with clocking overlength frames. The definition of the FDDI point-to-point clocking has no slack for a maximum size frame, if one of the stations is at the negative end of the range, while the other station is at the positive end. Even adding 1 byte will theoretically cause elastic buffer overflows to occur.

FDDI also raised a concern about management, where overlength frames are counted as being bad. FDDI do not want to use FC encoding, again because of legacy equipment getting confused.

Mike went on to present extending this LSAP encoding to Ethernet as well. By fixing a point in the frame, after which the VLAN information is present and identical independent of the media, it would allow a single VLAN hardware tagging/de-tagging solution to be created. This scheme would create frames of the following formats.

TR/FDDI	SD	AC	FC	DA	SA	RIF	**VLSAP**	**VLSAP**	**Ctrl**	**VID**	LLC	*Frame*	FCS	ED
ENet		Pre	SFD	DA	SA	**Type-Q**	**VLSAP**	**VLSAP**	**Ctrl**	**VID**	E-Type	*Frame*	FCS	
802.3		Pre	SFD	DA	SA	**Type-Q**	**VLSAP**	**VLSAP**	**Ctrl**	**VID**	LLC	*Frame*	FCS	

The committee felt that this idea would not be received well by 802.1 or 802.3, and it would harm our credibility to be seen presenting it. The idea should not be suppressed, but after some more research, it should be presented to the 802.3 committee, perhaps in a more informal manner.

The conclusion of this segment of committee time was a vote on which of three tagging methods should be adopted by the committee - LSAP 5 byte, LSAP 6 bytes or SNAP 10 bytes. Straw poll BB1 passed indicating that the committee wishes to see the LSAP 5 byte method adopted by 802.1q.

Comment Resolution of 802.5s Draft 2.0

Trevor Warwick presented Dave Wilson's resolution of comments for draft 2.0. Minor actions that arose from this comment resolution included:

- Accepting KTW23, caused COM1 against draft 6.0 of 802.5r, which modifies it to use the new wording for (optional).
- KTW31. In MODing this comment, Dave stated that it is the errors that meet the criteria. John, and the committee, believes that it is the token with error that meets the criteria… Committee request that KTW31 should be accepted unMODed.
- MJH9 has been changed by the committee to read "FR_WITH_ERR(criteria) A Frame with Error (see 4.3.2) is received which meets the specified criteria"

The major contentious issues were:

KTW26 - CORR=UNK_VALUE, optional-x

Ken Wilson presented 11-19, which recommended that all CORR=UNK_VALUE actions be replaced with [CORR=UNK_VALUE (optional-x)]. An example modified transition would look like:

	3620	**FR_MAC_INV(ERR_COND=VI_UNK & SC<>RS & CORR_NOT_PRESENT)**	TXI_RSP_PDU(DC=RCV_SC; SC=RS; [CORR=UNK_VALUE (optional-x)]; ~~CORR=UNK_VALUE;~~ RSP_TYPE=8003)

In addition, the definition of CORR=UNK_VALUE is changed to define CORR=UNK_VALUE (optional-x), as follows:

[CORR=UNK_VALUE (optional-x)]	The frame received did not contain a correlator subvector (3.3.4), thus the value of the correlator subvector to be transmitted is unspecified and the subvector may be omitted. The standard recommends new implementations not transmit the correlator subvector when no correlator subvector was received. ~~The value of the correlator subvector is unspecified and the correlator subvector may be omitted (3.3.4).~~

Dave Wilson has agreed to these changes.

NAJ10/NAJ11 - Annex A

Neil Jarvis presented his view that the PICS tables describing MAC vector and subvectors requirements should be deleted in both 802.5r and 802.5s. Neil's view is that the PICS tables are still not correct, despite six drafts, and they will never be correct because the question being asked "Does this station support…" is meaningless.

An example of a remaining error can be seen with the reception of the response MAC frame being marked optional (DTRSTXIMV00R). But transition 3503, FR_MAC()… causes this frame to be sent to management. Therefore the PICS entry should be mandatory. In fact all MAC frame reception entries should be mandatory…

Bob will be checking with the Exec whether the deletion of large portions of the PICS is allowable from 802.5s (and by implication from the base standard). This item has been tabled until Bob has more information from the Exec.

In off-line discussions with Alan Chambers, he felt that a grouped table in a PICS that contained only mandatory entries, could be replaced with a single mandatory entry.

In the case of Annex A tables describing the MAC vector and subvector requirements, Neil has suggested that these tables be deleted, and replaced with single entries saying that MAC vector and subvector *support* is mandatory.

Mick would like to see the flawed tables remain, because this is something he gives his test department, to direct their testing.

Neil is to come up with a Straw Poll to remove the PICS tables from Annex A. Because these changes are significant, it was further suggested that a mock up of a modified Annex A be presented.

Here is the mock-up for Annex A changes.

A6.3 Transitions relating to MAC Frames - DS::M

Does the data station implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DSM	Transitions relating to MAC Frames	3.3, 4	M	Yes[]

A6.4 Delete but retain section with suitable wording to preserve numbering

A10.3 Transitions relating to MAC Frames - DTRSTXI::M

Does the DTR Station (DTRSTXI) using the TXI Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRSTXIM	Transitions relating to MAC Frames	3.3, 9.2, 9.6 and 10.3	M	Yes[]

A10.4 Delete and renumber subsequent sections

A11.3 Transitions relating to MAC Frames - DTRSTKP::M

Does the DTR Station (DTRSTKP) using the TKP Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRSTKPM	Transitions relating to MAC Frames	3.3, 9.6 and 10.3	M	Yes[]

A11.4 Delete and renumber subsequent sections

A12.3 Transitions relating to MAC Frames - DTRPTXI::M

Does the DTR C-Port in Port Mode (DTRPTXI) using the TXI Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRPTXIM	Transitions relating to MAC Frames	3.3, 9.3 and 10.3	M	Yes[]

A12.4 Delete and renumber subsequent sections

A13.3 Transitions relating to MAC Frames - DTRPTKP::M

Does the DTR C-Port in Port Mode (DTRPTKP) using the TKP Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRPTKPM	Transitions relating to MAC Frames	3.3, 9.3, 9.4 and 10.3	M	Yes[]

A13.4 Delete and renumber subsequent sections

A14.3 Transitions relating to MAC Frames - DTRPSETXI::M

Does the DTR C-Port in Station Emulation Mode (DTRPTXI) using the TXI Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRPSETXIM	Transitions relating to MAC Frames	3.3, 9.2, 9.5 and 10.3	M	Yes[]

A14.4 Delete and renumber subsequent sections

A15.3 Transitions relating to MAC Frames - DTRPSETKP::M

Does the DTR C-Port in Station Emulation Mode (DTRPSETKP) using the TKP Access Protocol implement the following MAC Frame Station Operation Table transitions?

Item	Feature	Reference	Status	Support
DTRPSETKPM	Transitions relating to MAC Frames	3.3, 9.5, and 10.3	M	Yes[]

A15.4 Delete and renumber subsequent sections

NAJ14 - Annex P

Neil Jarvis presented his view that Annex P could lead implementations to be non-compliant, if token errors are included in the criteria for failing a lobe media test frame. [*Paper 11-24*]

Mike pointed out that Annex P analysis **only** works if tokens are not included in the test for a bad frame. A different analysis is required if tokens are to be included in the LMT. Neil is to put together words to include in Annex P to highlight this issue.

Here are the proposed changes to Annex P.1.

P.1 Bit Error Rate Testing: Example Analysis

Given an LMT which ~~that~~ employs "**m**" frames each with an equal length of "**n**" bits and ~~each with a criteria~~ that the test passes if no more than a single frame contains errors.

What is the probability of the LMT failing that test given:

- all bit errors are independent events and
- the probability of a single bit error is **q?**~~.~~

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There is a broad range of solutions which satisfies these criteria. This range includes lobe media tests with one million bits in 256 bit to 1024 bit equal length frames and a pass/fail criteria of:

- The lobe media test passes if there are ~~is~~ 0 or 1 frames with error(s).
- The lobe media test fails if there are 2 or more frames with error(s).

Note: For this analysis, a frame is not considered to be with error if the error is due to a Token with Error. This condition is required to satisfy this analysis' initial assumption that each frame has an equal and known length. Circulating tokens would contribute an unknown number of bits to each frame transmitted, and might cause LMT to fail a good lobe.

The committee ratified the new text with Straw Poll BB2. This change will need to go into both 802.5r Draft 7 and 802.5s Draft 3

MJH2 - Vector Code Points

John Messenger believes that in general MAC frames may be transmitted with 1 or 3 octet vector identifiers, except for MAC frames marked as "Transmit as shown" in the tables in 4. Ken Wilson disagrees with this interpretation. In John's view, X'FF 00 02' and X'02' are identical. Ken however, claims that these two represent different vector code points.

Mike Siegel suggested making a rule that when transmitting a vector, if the value of the vector ID is greater than or equal to 255, then it shall be transmitted using the three byte extended vector ID encoding. Otherwise a single byte vector ID encoding shall be used. The committee may then not define a vector identifier of the form X'FF 00 yy', because the transmit rules would be violated.

The committee has agreed on the following wording, describing the vector identifier encoding.

> **VI (vector identifier).** A one- or three-octet code point that uniquely identifies the vector. This field is one octet in length if the first octet is not X'FF' and three octets in length if the first octet is X'FF'. A value of X'FF' means the vector code is contained in the next two octets. A vector code of less than X'FF' shall be transmitted using one octet. A vector code of

greater than or equal to X'FF' shall be transmitted using three octets. The definition of all undefined vector codes used with a source class or destination class of zero (ring station) is reserved for future standardization.

Comment Resolution of 802.5r Draft 6.0

Using the paper copy of the comments on draft 6.0 [*Paper 11-18*], the committee proceeded to review and close all DIS comments. Outstanding issues include:

CORR=UNK_VALUE, optional-x

The editor has proposed resolving this as described in the resolution of 802.5s comments above. The committee is now waiting for a response from Dave Wilson to finally close the issues.

Dave has agreed, and the issue is closed.

Annex A, PICS Tables

This is closed by the modifications shown for 802.5s above.

Annex P, LMT and tokens

This is closed by the new text shown for 802.5s above.

Miscellaneous

John Messenger raised a concern about requests made to the executive, by other committees, to purchase overhead LCD panels for use at interim and plenary meetings. He felt that this was a misuse of the meeting fees. Other committees, including our own, provide their own equipment at their own expense. The committee thanked Bob Love for providing and transporting the overhead LCD panel used at all recent 802.5 committee meetings.

Bob Love agreed to raise John's concern to the executive.

802.5j History

Paul Gessert provided the following potted history of 802.5j's recent past.

- The confirmation ballot that was done on draft 3.1 passed, DIS vote removed. See 802.5-96/10-08
- Draft 4 is draft 3.1 with change bars to show comment resolutions listed in 802.5-96/10-08
- Draft 5 is draft 4 with change bars removed.
- No technical changes were made after the confirmation ballot.
- The PDF of draft 5 is on the Proteon FTP server. (Thanks NJ)
  http://ftp.proteon.com/~jlm/802.5/802.5j-d5/pdf/8025jd50.pdf

Closing 802.5 Plenary

Mick Hanrahan opened the meeting.

- The agenda (as shown above) was approved unanimously.
- Votes BB5 and BB6 approved meeting AA and aa minutes.
- Mick Hanrahan gave Paul's quick rundown of 802.5j's history (shown above), and vote BB4 passed to forward 802.5j draft 5.0 to LMSC ballot.
- John Messenger gave his 802.1d liaison report. Copies of his presentation given during the 802.1d technical plenary are available from 802.1d. [*Paper 11-21*]

  802.1d showed a willingness to adopt the 802.5 proposed TR tagging format. The only comment was that the additional bytes (5) caused a odd/even boundary change, although it was pointed out that the 802.5 committee had decided that this was not an issue. One possible resolution however, was to remove the single byte Ctrl field altogether. This fixes the odd/even boundary change. Also if the DSAP-SSAP value pair were chosen to be the same bit pattern as the ethernet VLAN tagging type VPID, then there would be a perverse symmetry between 802.5 and 802.3.

  LSAP assignment is done by SC6, and thus controlled by 802.1. The DSAP and SSAP values need not be the same.

  John Messenger will conduct a poll on adopting the four byte VLAN tagging proposal as shown below. This will take place on the e-mail reflector.

Octets	1	1	1	6	6	0-30	**1**	**1**	**2**	n	4	1
Fields	SD	AC	FC	DA	SA	RIF	**DSAP**	**SSAP**	**VID**	Encapsulated Frame	FCS	ED

- John also summarised the 802.1 priority presentation.
- 802.1q draft 3 is now available. Changes between draft 3 and draft 4 primarily will include the ingress, progress and egress rules. Draft 4 is likely not to include any frame format changes.
- Break, which had to last 30mins because we approved the agenda…
- As discussed in the opening plenary, the decision as to whether a document should be forwarded to LMSC ballot, is to be made by examining the technical changes required to the last draft, and asking if anybody's implementation based on this draft would be broken by these changes. This is an unofficial rule, but the committee agreed to its use for both 802.5r and 802.5s. John Messenger expressed the opinion that this must not become a de facto rule in the future.
- **802.5r Draft 6**
  Draft 7 (PDF format with change bars) is to be made available as soon as possible (next week) on the Proteon FTP site. This will allow the committee members to *proof read* the editors' attempts to satisfy the committee's instructions, prior to issuing the document for LMSC ballot. The PDF version will be suitably marked to indicate that this will not be the version of 802.5r that is forwarded to LMSC. The committee will be polled via e-mail, before the updated draft 7 version is produced by the editors and sent to LMSC.
- Vote BB9 passed, instructing that 802.5r draft 7, without change bars, be forwarded to LMSC.
  Vote BB11 passed, instructing that 802.5r draft 7, without change bars, be forwarded to ISO DAM Ballot
- **802.5s Draft 2**
  Ballot voting result: 18 Approve, 3 Disapprove, 1 Abstain
  Do we need a confirmation ballot on 802.5s draft 3? The committee believes that this is not required.
  Draft 3 (PDF format with change bars) is to be made available as soon as possible (next week) on the Proteon FTP site. This will allow the committee members to *proof read* the editor's attempt to satisfy the committee's instructions, prior to issuing the document for LMSC ballot. The PDF version will be suitably marked to indicate that this will not be the version of 802.5s that is forwarded to LMSC. The committee will be polled via e-mail, before the updated draft 3 version is produced by the editors and sent to LMSC.

- Vote BB7 passed, instructing that 802.5s draft 3 be forwarded to LMSC Ballot
  Vote BB10 passed, instructing that 802.5s draft 3 be forwarded to ISO DIS Ballot
- To vote on the LMSC ballot, you must make a request to be added to the 802.5 voting pool.
- John Messenger presented his ideas for a Token Ring MII (Media Independent Interface). This could be investigated by an 802.5 study group, perhaps via e-mail, or at an interim meeting. Some committee members expressed the view that this would be an interesting and valuable area of work. This idea should be discussed further via e-mail, and if there is continued interest, a study group would be requested at the next plenary meeting.
- Nobody felt a pressing need for an interim 802.5 meeting between now and next March.
- The next plenary session is March 10th-14th 1997, to be held in Irvine, CA.
- Flow control reared its ugly head again, ☹, but was beaten back with large sticks.
- Kirk Preiss presented his mockup of the IEEE 802 Home Page.
- John Messenger has setup an IEEE 802.5 home page. Point your browser at:

http://ftp.proteon.com/~jlm/802.5/README.html

If your keyboard does not have a tilde (~), try:

http://ftp.proteon.com/%7Ejlm/802.5/README.html

- The committee must now start to think about combining 802.5j, 802.5r and 802.5s into a single document.
- The meeting was adjourned until 3pm Monday, March 10th in Irvine, CA.

Meeting Document List

Note: Documents marked with *r1, r2, etc.* indicate that they were updated during the meeting, and re-issued to the committee. The number indicates the revision.

Number	***Title***	***Author***
11-00	Document List: 802.5 November 96 Plenary	RD Love
11-01	802.5 Preliminary Agenda for Nov96 Plenary	RD Love
11-02	Plenary Meeting Minutes, Meeting AA	RD Love
11-03	Business Cards	-
11-04	Annex N Update	KT Wilson
11-05	Annex Q Update	KT Wilson
11-06	Annex R Update	KT Wilson
11-07	Errata Text for Draft 6	RD Love
11-08	802.5 Voters, Vancouver	RD Love
11-09	High Speed Token Ring Proposed PAR	RD Love
11-10	D5 Final Vote Summary	RD Love
11-11	Interim Meeting Minutes, Meeting aa	RD Love
11-12	Responsibilities of IEEE 802.5 and its participants	RD Love
11-13	Annex L Update	KT Wilson
11-14	Ballot Comments on 802.5s	D Wilson
11-15r1	New 9.1.1.9 – Interpreting the FSMs	KT Wilson
11-16	Note specifying Object Identifier for Token Ring MIB	RD Love
11-17	Concentrator Management Group Address Assignment	RD Love
11-18	Comments Against IEEE 802.5r Draft D6	RD Love
11-19r1	CORR=UNK_VALUE Proposal	KT Wilson
11-20	802.1 Ottawa October 1996 Meeting Liaison Report	J Messenger
11-21	VLAN Tagging	M Siegel
11-22	802.5j Draft 5.0	P Gessert
11-23	Vote disposition on 802.5j Draft 5.0	P Gessert

Meeting Action Items

Number	*Owner*	*Description*	*Status*
11-01	B Love	Present vote BB1 to the executive	Open
11-02	M Siegel	Update 802.5 VLAN Tagging Proposal	Complete
11-03	T Warwick	Communicate 802.5s changes to Dave Wilson.	Complete
11-04	B Love	Ask Exec about deleting PICS tables from 802.5s	Open
11-05	N Jarvis	Create a mock up of Annex A changes required by NAJ10/NAJ11.	Complete
11-06	N Jarvis	Create new wording for Annex P	Complete
11-07	J Messenger	Conduct poll on adopting four byte VLAN tagging proposal via e-mail	Open
11-08	D Wilson	Create 802.5s Draft 3 as per committee's instructions.	Open
11-09	B Love	Forward 802.5s Draft 3 for LMSC ballot	Open
11-10	B Love	Forward 802.5s Draft 3 for ISO DAM ballot	Open
11-11	802.5r Editors	Create 802.5r Draft 7 as per committee's instructions.	Open
11-12	B Love	Forward 802.5r Draft 7 for LMSC ballot	Open
11-13	B Love	Forward 802.5r Draft 7 for ISO DIS ballot	Open
11-14	B Love	802.5 chair is to express concern to exec about spending IEEE 802 money on overhead LCD panels.	Open
11-15	N Jarvis	Produce 802.5 status slides.	Complete