IEEE 802.3 Maintenance

November 16th, 2006
Dallas, TX

David Law

David_Law@3Com.com

Activities this week

- ## Met Tuesday afternoon
  - Reviewed open maintenance request
  - IEEE Std 802.3 revision plan
  - IEEE Interpretation 2-11/06
    - IEEE Std 802.3an-2006 10GBASE-T Equation 55-55
  - ISO/IEC 8802-3 status

Maintenance Request Status

- 34 Open Maintenance requests
- Current status of open requests -

  Ready for ballot   27

  Awaiting clarification   1

  To be categorised   6

New requests

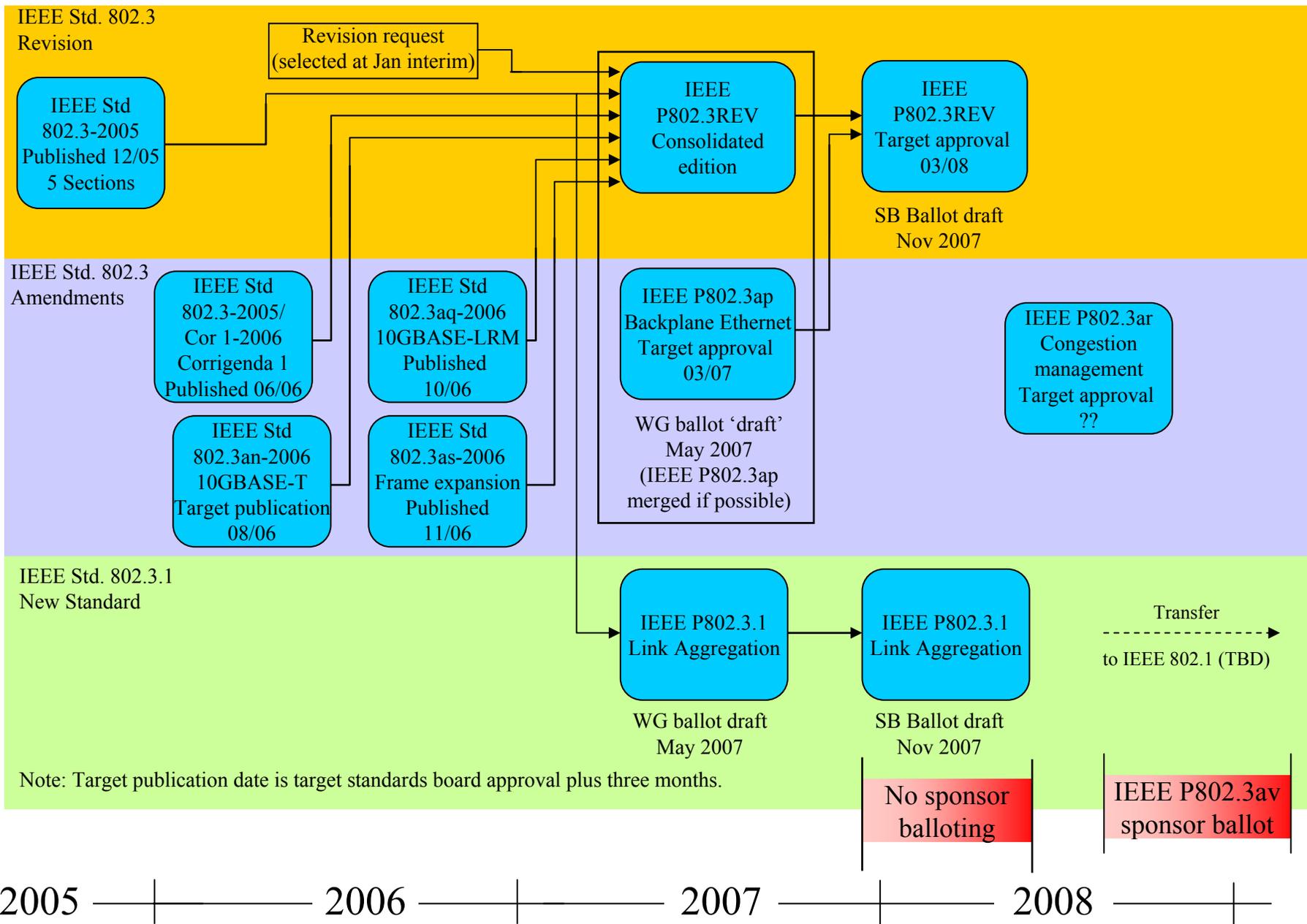| Request	Standard	Subclause	Subject	New Status
1179	IEEE Std 802.3-2005	28.5.4.5	Cross reference error	Ready for ballot
1180	IEEE Std 802.3an-2006	28.5.4.8	PICS status error	Ready for ballot
1181	IEEE Std 802.3an-2006	45.2.1.1	Register name error	Ready for ballot
1182	IEEE Std 802.3an-2006	45.2.1.4	Missing bit definition in register	Ready for ballot
1184	IEEE Std 802.3-2005	45.2.7.1	Cross reference error	Ready for ballot
1185	IEEE Std 802.3an-2006	45.2.7.10	Bit description typo	Ready for ballot
1186	IEEE Std 802.3an-2006	45.5.3.3	Missing PICS item	Ready for ballot
1187	IEEE Std 802.3an-2006	45.5.3.8	PICS clarification	Ready for ballot
1188	IEEE Std 802.3an-2006	45.5.3.8	PICS inconsistent with text	Ready for ballot
1189	IEEE Std 802.3an-2006	55.12.6	PICS status error	Ready for ballot
1190	IEEE Std 802.3an-2006	55.12.8	PICS cross reference error	Ready for ballot
1191	IEEE Std 802.3an-2006	28.3.4	Variable spelling error	Ready for ballot

IEEE 802.3 Revision plan

Revision requirements

- Revision required when
  - three years have elapsed since last revision
    - IEEE Std 802.3-2005 approved June 2005
  - and number of amendments is four or more
    - We will probably have 5 amendments by June 2008
- Can ask for 2 year extension from Standards Board
  - Based on 'extenuating circumstances'
  - Requires
    - Project plan outlining the rationale
    - Schedule for the revision
- Not meeting these requirement will block new projects
  - RevCom defers consideration of additional amendments
- While revision is in sponsor ballot
  - No amendment sponsor ballot can start

IEEE 802.3 revision plan proposal

- Minimum year long process
  - Currently balloting projects complete by March 2007
    - IEEE P802.3ar Congestion Management not in ballot
  - Next sponsor ballots commence
    - IEEE P802.3at DTE Power Enhancements
    - IEEE P802.3av 10GEPON – July 2008
- Consolidated draft dependant on IEEE-SA Staff resources
  - Draft should be available May 2007
- Request to move Link Aggregation to IEEE 802.1
  - It is an 802.3 sublayer but it has to go above IEEE Std 802.1x
  - Transfer Link Aggregation directly from IEEE 802.3 to IEEE 802.1
    - IEEE Std 802.3 and IEEE 802.1 revisions would be dependant
  - Split Link Aggregation out then transfer to IEEE 802.1 later
    - New standard would be IEEE Std 802.3.1
      - IEEE P 802.3.1 would be dependant on the IEEE Std 802.3 Revision
    - No cross Working Group dependency

IEEE Std 802.3 revision plan proposal – 16th November 2006

IEEE Std. 802.3 Revision

Revision request (selected at Jan interim)

IEEE Std 802.3-2005 Published 12/05 5 Sections

IEEE P802.3REV Consolidated edition

IEEE P802.3REV Target approval 03/08

SB Ballot draft Nov 2007

IEEE Std. 802.3 Amendments

IEEE Std 802.3-2005/ Cor 1-2006 Corrigenda 1 Published 06/06

IEEE Std 802.3aq-2006 10GBASE-LRM Published 10/06

IEEE P802.3ap Backplane Ethernet Target approval 03/07

IEEE P802.3ar Congestion management Target approval ??

IEEE Std 802.3an-2006 10GBASE-T Target publication 08/06

IEEE Std 802.3as-2006 Frame expansion Published 11/06

WG ballot 'draft' May 2007 (IEEE P802.3ap merged if possible)

IEEE Std. 802.3.1 New Standard

IEEE P802.3.1 Link Aggregation

WG ballot draft May 2007

IEEE P802.3.1 Link Aggregation

SB Ballot draft Nov 2007

Transfer

to IEEE 802.1 (TBD)

Note: Target publication date is target standards board approval plus three months.

No sponsor balloting

IEEE P802.3av sponsor ballot

2005 — 2006 — 2007 — 2008 —

IEEE Std 802.3 revision plan proposal – 16th November 2006 IEEE 802.3.1 Link Aggregation

- Contents
  - Clause 43 Link Aggregation
  - Annex 43A Collection and Distribution functions
  - Annex 43C LACP standby link selection and dynamic Key management
  - Annex 30C SNMP MIB definitions for Link Aggregation
  - Clause 1 definition related only to Link Aggregation
    - For example subclause 1.4.53 '**Actor:** The local entity in a Link Aggregation Control Protocol exchange. (See IEEE 802.3, Clause 43.)'
  - Subclause 30.7 Management for Link Aggregation
    - And all its subclauses
  - Annex 30B content in support of 30.7
- Keep in IEEE 802.3
  - Annex 43B Requirements for support of Slow Protocols

IEEE Std 802.3 revision plan proposal – 16th November 2006 Timeline

- ## Timeline

Revision request selection	Jan 2007
NesCom submittal[#]	27th Jan 2007
EC PAR approval	16th Mar 2007
PAR approval[#]	22nd Mar 2007
Working Group Ballot	01st Jun 2007
Sponsor Ballot	Nov 2007
RevCom submittal[#]	Apr 2008
Standards board approval[#]	Jun 2008

  # Externally determined dates

- ## Drafts dependant on IEEE-SA Editorial staff resource
  - Current plan is for May 2007
  - Want ability to move forward if draft available earlier

IEEE 802.3 Motion

- Request that IEEE 802.3 authorise the IEEE 802.3 Working Group chair to work with the IEEE 802.3 Maintenance Task Force to generate and pre-submit a Revision PAR for IEEE Std 802.3 and a New Standard PAR for IEEE P 802.3.1 Link Aggregation based on the plan 'IEEE Std 802.3 revision plan proposal – 16th November 2006'
- Charter the IEEE 802.3 Maintenance Task Force to develop drafts based on plan 'IEEE Std 802.3 revision plan proposal – 16th November 2006'
- Request that IEEE 802.3 authorise the IEEE 802.3 Maintenance Task Force to pre-submit the IEEE 802.3 Revision and IEEE P802.3.1 drafts prior to the March plenary if available (making this request without a PAR is without precedent).

M: Law
S: Beck

ISO/IEC 8802-3 status

IEEE 802.3 Working Group Standards Status November 13th, 2006

ISO/IEC approved

ISO/IEC 8802-3:2000

IEEE approved

IEEE Std 802.3-2005
5 Books (Sections) Published 12-Dec-05

Section 1 **Clause 1 to 20** **Annex A to H**	**Section 2** **Clause 21 to 33** **Annex 22A to 32A**	**Section 3** **Clause 34 to 43** **Annex 36A to 43C**	**Section 4** **Clause 44 to 54** **Annex 44A to 50A**	**Section 5** **Clause 56 to 67** **Annex 58A to 67A**
CSMA/CD Overview **MAC** **PLS/AUI** **10BASE5 MAU** **10BASE2 MAU** **10BROAD36 MAU** **10BASE-T MAU** **10BASE-F MAUs** **10Mb/s Repeater** **10Mb/s Topology** **1BASE5** **DTE & MAU Mgmt** **Repeater Mgmt**	**100Mb/s Overview** **MII** **100BASE-T2** **100BASE-T4** **100BASE-TX** **100BASE-FX** **100Mb/s Repeater** **100Mb/s Topology** **MAC Control** **Auto Negotiation** **Management**	**1000Mb/s Overview** **GMII** **1000BASE-X AutoNeg** **1000BASE-SX** **1000BASE-LX** **1000BASE-CX** **1000BASE-T** **1000Mb/s Repeater** **1000Mb/s Topology** **Link Aggregation**	**10Gb/s Overview** **MDC/MDIO** **XGMII** **XAUI** **XSBI** **10GBASE-SR** **10GBASE-LR** **10GBASE-ER** **10GBASE-SW** **10GBASE-LW** **10GBASE-EW** **10GBASE-LX4** **10GBASE-CX4** **Maintenance 7**	**Subscriber Access** **Overview** **OAM** **Multi-point MAC** **Control** **100BASE-LX10** **100BASE-BX10** **1000BASE-LX10** **1000BASE-BX10** **1000BASE-PX10** **1000BASE-PX20** **10PASS-TS** **2BASE-TL** **Subscriber Access** **Topology**
Maintenance 6 **Maintenance 7**	**DTE Power** **Maintenance 6** **Maintenance 7**	**Maintenance 6** **Maintenance 7**		

IEEE
Std 1802.3-2001
10BASE-T
Conformance Test
Published 19-Oct-01

IEEE 802.3
Policy and
Procedures
Approved
Nov-97

IEEE Std 802.3-2005/Cor 1-2006
Corrigenda 1
Published 26-Jun-06

IEEE
Std 802.3an-2006
10GBASE-T
Published 1-Sep-06

IEEE
Std 802.3aq-2006
10GBASE-LRM
Published 16-Oct-06

IEEE
Std 802.3as-2006
Frame Extension
Published 13-Nov-06

802.3
WG
in
process

.3ap
Backplane
Ethernet
Task Force
(A. Healy)
SB recirc

802.3 WG
new
work items

.3ar
Congestion
management
Task Force
(K. Daines)
Draft preview

.3at
DTE Power
Enhancements
Task Force
(M. McCormack)

.3av
10Gb/s
EPON
Task Force
(G. Kramer)

Higher Speed
Study Group
(J. D'Ambrosia)

Energy Efficient
Ethernet
Call for Interest
(M. Bennett)

ISO/IEC 8802-3 status

- Process exists for SC6 to comment during balloting
  - ISO/IEC 8802-1:2001
  - SC6 working on updating process
  - Agenda item for April 2007 SC6 meeting
    - Will be a topic at March IEEE 802.3 meeting
- Recommendations
  - We should continue to pause
  - Consider using new process for next revision

IEEE Interpretation 2-11/06

IEEE Std 802.3an-2006 10GBASE-T
Equation 55-55

Request 2-11/06

Interpretation Request

This is a request for interpretation of subclause 55.8.2.2 of the recently published 10GBASE-T standard, IEEE Std 802.3an-2006.

Subclause 55.8.2.2 states:

Impedance balance is a measure of the impedance-to-ground difference between the two MDI contacts used by a duplex link channel and is referred to as common-mode-to-differential-mode impedance balance. The common-mode-to-differential-mode impedance balance, $Z_{bal}(f)$, of each channel of the MDI shall meet the relationship:

$$Z_{bal}(f) \geq \begin{cases} 48 & 1 \leq f < 30 \\ 44 - 19.2\left(\dfrac{f}{50}\right) & 30 \leq f \leq 500 \end{cases} \qquad (55\text{–}55)$$

where f is the frequency in MHz when the transmitter is transmitting random or pseudo random data.

Equation 55-55 therefore provides the limit to which MDI impedance balance must be equal to or exceed. When however this limit line is plotted it passes through zero at 120MHz, representing it would appear no limit, and then continues to be increasingly negative after that.

On comparison with equivalent cabling specification it would appear that the equation is missing a log(10) frequency dependency. This seems to be confirmed by the presentation 'Impedance Balance' given by Terry Cobb at the July 2005 meeting [http://www.ieee802.org/3/an/public/jul05/cobb_1_0705.pdf]. Based on this information it appears that the equation should actually read:

$$
Z_{bal}(f) \geq \begin{cases} 48 & 1 \leq f < 30 \\ 44 - 19.2\log_{10}\left(\dfrac{f}{50}\right) & 30 \leq f \leq 500 \end{cases}
$$

Please could you confirm if this is correct.

Interpretation 2-11/06 10GBASE-T MDI impedance balance

$$Z_{bal}(f) \geq \begin{cases} 48 & 1 \leq f < 30 \\ 44 - 19.2\log_{10}\left(\dfrac{f}{30}\right) & 30 \leq f \leq 500 \end{cases}$$

The term log10 appears to be missing

As this is error require corrigendum project
– Requested WG Chair to generate and submit PAR

• Maintenance PAR
– Does not need to meet the normal LMSC Executive Committee pre-submittal requirements.

IEEE P802.3-2005/Cor 2 (IEEE P802.3aw) 10GBASE-T corrigendum

- Timeline

Draft review	16th Nov 2006
EC PAR approval	17th Nov 2006
Working Group Ballot	Nov 2006
PAR approval#	27th Feb 2007
Comment resolution meeting	20th Jan 2007
Sponsor Ballot	28th Feb 2007
RevCom submittal #	27th Apr 2007
Standards board approval #	07th Jun 2007

Externally determined dates

IEEE P802.3-2005/Cor 2 (IEEE P802.3aw) 10GBASE-T corrigendum

- **Title:** Information technology— Telecommunications and information exchange between systems— Local and metropolitan area networks—Specific requirements— Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and physical layer specifications - Corrigendum 2: IEEE Std 802.3an-2006 10GBASE-T Correction

- **Scope:** This corrigendum will correct Equation 55-55

- **Purpose:** Somehow during the draft development, a Log10 term in the equation was missed. No one in the ballot group commented on it. The change does not qualify as an errata and therefore is being done as a corrigendum.

IEEE 802.3 Motion

IEEE 802.3 approves the PAR for IEEE P802.3-2005/Cor 2 10GBASE-T Corrigendum

IEEE 802.3 requests the IEEE 802 LMSC Executive Committee to submit the IEEE P802.3-2005/Cor 2 10GBASE-T Corrigendum PAR to NESCOM.

M: Law
S: Carlson

_____

Note:- As a maintenance PAR this did not need to meet the normal LMSC Executive Committee pre-submittal requirements.

IEEE 802.3 motion

Due to the urgency and extremely limited scope:
- Request that IEEE 802.3 send IEEE P802.3-2005/Cor 2 D1.0 to Working Group ballot (making this request without draft preview and at the same time as PAR submittal is without precedent).
- Request that IEEE 802.3 authorise the IEEE 802.3 Working Group chair to submit IEEE P802.3-2005/Cor 2 to sponsor ballot conditional upon successful completion of the Working Group ballot (making this request at the same time as Working Group ballot authorisation is without precedent).
- Request that IEEE 802.3 authorises the IEEE P802.3aw Task Force to conduct meetings and recirculation ballots as necessary to resolve comments received during Working Group and Sponsor Balloting.

M: Law
S: Frazier

IEEE 1802.3-2001 Reaffirmation

November 16th, 2006
Dallas, TX

David Law

David_Law@3Com.com

IEEE 1802.3-2001 Reaffirmation

- Standards require reaffirmation or revision
  - Every 5 years
- Sponsor ballot group formation
  - Invitation Closed 29th July
- Sponsor balloting
  - Ballot opened 10th August
  - Ballot closed 9th September
- **Continue balloting**

IEEE 1802.3 Reaffirmation
Sponsor ballot results

Ballot opened 10th August 2006, closed 9th September 2006

Comments received: 8

	#	%		Status
		Actual	Require	
Abstain	4	7	< 30	PASS
Disapprove with comment	1	-	-	-
Disapprove without comment	0	-	-	-
Approve	53	98	≥ 75	PASS
Ballots returned	58	75	≥ 75	PASS
Voters	77	-	-	-

IEEE 1802.3-2001 Reaffirmation

- Comments
  - http://www.ieee802.org/3/1802reaff/1802p3reaff.pdf
- Instructions for reaffirmation:
  - "If you enter an affirmative vote, you will be implying that this standard continues to reflect the state-of-the-art and contains no obsolete or erroneous information.
- Disapprove comment – proposed remedy
  - Given the amount of out of date material and that we have not chosen to write conformance standards for the later PHYs, the standard should probably be withdrawn rather than revised.
- Need to decide if to move forward
  - Continue reaffirmation
  - Withdraw the standard
  - Start a revision project for it
    - Need a volunteers to run and participate
  - Combination of above