IEEE 802.3 Closing EC Items

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IEEE P802.3bf
PAR for MAC service interface and management parameters to support time synchronization protocols to NesCom

IEEE P802.3bf PAR (Part 1)

P802.3bf

Submitter Email: david_law@ieee.org
Type of Project: Amendment to IEEE Standard 802.3-2008
PAR Request Date: 21-Sep-2009
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for an Amendment to an existing IEEE Standard 802.3-2008

1.1 Project Number: P802.3bf
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for 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 SpecificationsAmendment: Media Access Control (MAC) service interface and management parameters to support time synchronization protocols

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3.1 Working Group: Ethernet Working Group (C/LM/WG802.3)
Contact Information for Working Group Chair
Name: David Law
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Contact Information for Working Group Vice-Chair
Name: Wael Diab
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IEEE P802.3bf PAR (Part 2)

3.2 Sponsoring Society and Committee: IEEE Computer Society/Local and Metropolitan Area Networks (C/LM)
Contact Information for Sponsor Chair
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
Phone: 857.205.0050
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2011
4.3 Projected Completion Date for Submittal to RevCom: 06/2011

5.1 Approximate number of people expected to be actively involved in the development of this project: 15
5.2 Scope: Amend IEEE Std 802.3-2008 to extend the Media Access Control service interface and add management parameters to provide support for the IEEE 802.1AS time synchronization protocol.
5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: Provide an accurate indication of the transmission and reception initiation times of certain packets as required to support IEEE P802.1AS.
5.5 Need for the Project: Ethernet can be applied in many new applications if a time synchronization capability is added. Potential new applications include: Audio-Video bridging; telecommunications; wireless backhaul; industrial control and SmartGrid. For example Audio-Video bridging is targeted at mass market consumer electronic products.
5.6 Stakeholders for the Standard: Stakeholders identified to date includes but are not limited to:
users and producers of systems and components for Audio-Video bridging, telecommunications, wireless backhaul, industrial control and SmartGrid.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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IEEE P802.3bf PAR (Part 3)

7.1 Are there other standards or projects with a similar scope?: No
7.2 International Activities
a. Adoption
Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: No
b. Joint Development
Is it the intent to develop this document jointly with another organization?: No
c. Harmonization
Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation):

Working Group vote: Y:48, N:0, A:8

The 5 Criteria

The DRAFT 5 Criteria and Objective were approved by the TSSG at the September 2009 802.3 Interim.

Updated 11/18/09

Updated 11/19/09 Approved by 802.3 WG

Compatibility slide:

Text in red was deleted; text in blue was added

Broad Market Potential

- **Broad set of applications**
- **Multiple vendors, multiple users**
- **Balanced cost, LAN vs. attached stations**
- Ethernet can be applied in many new applications if a time synchronization capability is added. Audio-Video Bridging is well understood, as it started in 802.3 as the Residential Ethernet SG. Other potential new applications include wireless backhaul, industrial control, and SmartGrid.
- This capability has been available from many vendors on a proprietary basis for some years. Having an interoperable standard will significantly expand the market.
- The introduction of time synchronization protocols will not change the cost balance.

Working Group vote: Y:54, N:0, A:2

Compatibility

- **IEEE 802 defines a family of standards. All standards shall be in conformance with the IEEE 802.1 Architecture, Management, and Interworking documents as follows: IEEE 802. Overview and Architecture, IEEE 802.1D, IEEE 802.1Q, and parts of IEEE 802.1f. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1.**
- **Each standard in the IEEE 802 family of standards shall include a definition of managed objects that are compatible with systems management standards.**
- **Compatibility with IEEE Std 802.3**
- **Conformance with the IEEE Std 802.3 MAC**
- **Managed object definitions compatible with SNMP**

- As an amendment to 802.3, the proposed project will remain in conformance with IEEE 802.1 Overview and Architecture as well as the bridging standards IEEE Std 802.1D and IEEE 802.1Q, and support of IEEE P802.1AS.
- As an amendment to IEEE 802.3, the proposed project will follow the existing format and structure of IEEE 802.3 MIB definitions by providing a protocol-independent specification of managed objects.
- Time synchronization capable interface DTEs will interoperate with legacy interfaces DTEs, though the time synchronization capability will not be active.
- Support for the time synchronization will be limited to the full-duplex operation mode of the IEEE Std 802.3 MAC.
- The project will include a protocol independent specification of managed objects with SNMP management capability to be provided in the future by an amendment to the yet-to-be-approved IEEE P802.3.1.

Working Group vote: Y:49, N:1, A:2

Distinct Identity

- **Substantially different from other IEEE 802 standards**
- **One unique solution per problem (not two solutions to a problem)**
- **Easy for the document reader to select the relevant specification**

- Ethernet currently has no time synchronization capability. This project does not overlap IEEE 802.1AS, but in fact complements it.
- We will pick a single solution.
- Time synchronization will be defined as an optional extension to existing interfaces and management clauses. There is no other definition of a time synchronization interface and management in 802.3

Working Group vote: Y:52, N:0, A:3

Technical Feasibility

- **Demonstrated system feasibility**
- **Proven technology, reasonable testing**
- **Confidence in reliability**
- This functionality has been successfully implemented and demonstrated by numerous parties for a number of years. The technology has been deployed with time synchronization capabilities.
- Laboratory work and existing implementations demonstrate the testability of time synchronization. See Garner, Geoffrey; Johas Teener, Michael; Gelter, Aaron; "New Simulation and Test Results for IEEE 802.1AS Timing Performance", 2009 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication, October 12-16, 2009, University of Brescia, Brescia, Italy
- Nothing in the project is expected to decrease the reliability of Ethernet.

Working Group vote: Y:51, N:1, A:3

Economic Feasibility

- **Known cost factors, reliable data**
- **Reasonable cost for performance**
- **Consideration of installation costs**
- The cost, reliability and performance are well understood
- Time synchronization will require a small number of additional logic elements to provide the necessary information to the interface.
- This project will not affect the installation cost of Ethernet.

Working Group vote: Y:53, N:0, A:2

IEEE P802.3bf PAR and 5 criteria

Motion:

The LMSC Executive Committee approves the P802.3bf PAR and Five Criteria; and approves the PAR remaining on the December NesCom agenda.

M: D Law, S: Jeffree

Y: ??, N: ??, A: ??

Working Group votes

PAR:	Y:48	N:0	A:8
Broad Market Potential:	Y:54	N:0	A:2
Compatibility:	Y:49	N:1	A:2
Distinct Identity:	Y:52	N:0	A:3
Technical Feasibility:	Y:51	N:1	A:3
Economic Feasibility:	Y:53	N:0	A:2

Ethernet support for the IEEE P802.1AS time synchronization protocol Study Group

Motion:

The LMSC Executive Committee grants approval to extend (2nd extension) of the IEEE P802.1AS time synchronization protocol Study Group within IEEE 802.3

M: D Law, S:

Y: ??, N: ??, A: ??

Working Group Vote

Y: 46 N: 0 A: 1

IEEE P802.3ba
40Gb/s and 100Gb/s Ethernet to Sponsor ballot

IEEE 802.3ba 40Gb/s and 100Gb/s Ethernet Working Group balloting results

- 3rd Working Group recirculation ballot – draft D2.3
  - Ballot opened 16th October, closed 30th October 2009
  - 97% approval, 77 comments received

Comments received: 77	Initial Draft D2.0			1st Recirculation Draft D2.1			2nd Recirculation Draft D2.2			3rd Recirculation Draft D2.3			Req %
	#	%	Status	#	%	Status	#	%	Status	#	%	Status	
Abstain	10	8	PASS	11	8	PASS	14	10	PASS	7	5	PASS	< 30
Disapprove with comment	32	-	-	30	-	-	21	-	-	4	-	-	-
Disapprove without comment	3	-	-	2	-	-	1	-	-	1	-	-	-
Approve	87	73	FAIL	97	76	PASS	108	83	PASS	134	97	PASS	≥ 75
Ballots returned	132	57	PASS	140	61	PASS	144	62	PASS	146	63	PASS	≥ 50
Voters	229	-	-	229	-	-	229	-	-	229	-	-	-

IEEE 802.3ba 40Gb/s and 100Gb/s Ethernet 3rd Recirculation ballot (D2.3) comments

- 77 comments received on last recirculation
  - 28 Technical Required (from one commenter)
  - 3 Editorial Required (from three commenters)
  - 21 Technical,
  - 25 Editorial
- Disposition of required comments
  - 22 Technical Required withdrawn
  - 6 Technical Required rejected
    - Commenter satisfied
  - 2 Editorial Required accepted
    - Resulted in non-substantive changes
  - 1 Editorial Required withdrawn
- No new unsatisfied comments on D2.3 ballot
- All comment responses available at the URL:

  http://ieee802.org/3/ba/public/nov09/P8023ba-D23-Final_Responses_byID.pdf

IEEE 802.3ba 40Gb/s and 100Gb/s Ethernet 3rd Recirculation ballot (D2.3) comments

- Summary of unsatisfied comments
  - D2.0 through D2.2
    - No new unsatisfied on D2.3
  - Brad Booth – 9 TR
    - Naming of PHY and PCS
  - Paul Kolesar – 2 TR
    - Use of special fiber for test
    - Use of test noted above for development of informative annex for extended reach MMF
  - Ali Ghiasi – 3 TR
    - 2 TR related to Tx specs (DDJ / amount of de-emphasis)
    - 1 TR related to CRU BW (Under Measurement method – clock recovery unit in TDP measurement, commenter change 10MHz spec to 7 MHz, no consensus to change)
  - Bob Grow – 1 ER
    - Co-ordination of clause numbering between projects

IEEE 802.3ba 40Gb/s and 100Gb/s Ethernet 3rd Recirculation ballot (D2.3) changes

- Summary of non-substantive changes draft
  - Removal of editorial note
  - Spelling error
  - Removal of hyphens
    - “differential-to-common..” to “differential to common”
  - Correction to Table Reference
  - Font size adjustment to match within equation
  - Font enlargement on figure to make it easier to read
  - Addition of ‘dB” to equation
  - Format “e” to be non italic
    - Mathematical constants are upright font
  - Activated link in cross-reference
  - Box around figure removed

IEEE P802.3ba 40Gb/s and 100Gb/s Ethernet to Sponsor ballot

Motion:

The LMSC Executive Committee grant approval to submit IEEE P802.3ba/D3.0 to Sponsor Ballot

M: D Law, S: J Lemon

Y: ??, N: ??, A: ??

Working Group vote:

Y: 70, N: 0, A: 0

IEEE P802.3-2008/Cor1 (IEEE 802.3bb) Timing Considerations for PAUSE Operation to RevCom

IEEE P802.3-2008/Cor (IEEE 802.3bb) to RevCom

- Item 1 - Date the Sponsor ballot closed:
  - IEEE 802.3 initial Sponsor ballot on closed 2nd Sep 2009
- Item 2 - Vote tally:

Comments: 0	Initial Draft D2.0			Req %
	#	%	Status	
Abstain	1	1	PASS	< 30
Disapprove with comment	0	-	-	-
Disapprove without comment	0	-	-	-
Approve	66	100	PASS	≥ 75
Ballots returned	67	88	PASS	≥ 75
Voters	76	-	-	-

IEEE P802.3-2008/Cor1 (IEEE 802.3bb)

Motion

The LMSC Executive Committee approves IEEE P802.3-2008/Cor1 (IEEE 802.3bb) Draft D2.0 remaining on the December RevCom agenda.

M: D Law, S:

Y: ??, N: ??, A: ??

Working Group vote:

Y: 59, N: 0, A: 3

IEEE 802.3 40Gb/s Ethernet Single-mode Fibre PMD Study Group

IEEE 802.3 40Gb/s Ethernet Single-mode Fibre PMD Study Group

Motion:

The LMSC Executive Committee grants approval for the formation of the IEEE 802.3 40Gb/s Ethernet Single-mode Fibre PMD Study Group within 802.3

M: D Law, S: J Lemon

Y: ??, N: ??, A: ??

88 CFI attendees, 40 interested in participating

Working Group vote:

Y: 46 N: 0 A: 1

IEEE-SA – TTA (Telecommunications Technology Association) MoU

IEEE-SA – TTA (Telecommunications Technology Association) MoU

Motion

The LMSC Executive Committee approves the following Working Groups to be included in the IEEE-SA – TTA MOU Technical Cooperation Agreement annex

IEEE 802.3	[WG vote:	Y:24	N:1	A:53	]
IEEE 802.11	[WG vote:	Y:39	N:0	A:1	]
IEEE 802.15	[WG vote:	Y:29	N:0	A:0	]
IEEE 802.21	[WG vote:	Y:9	N:0	A:1	]

M: D Law, S: B Heile

Y: ??, N: ??, A: ??