

**10GBASE-LRM  
OPENING REPORT TO IEEE 802.3**

**14<sup>th</sup> November 2005**

## Outline

- **IEEE802.3aq Officers**
- **Reflector and Web details**
- **10GBASE-LRM Objectives**
- **Project schedule**
- **Interim meetings**
- **Working Group and Confirmation Ballot Results**
- **October Interoperation report and motion**
- **Goals for this meeting**
- **Plan for this week**

# IEEE 802.3aq Officers

- **Task Force Chair:** [David Cunningham](#)
- **Editor:** [Nick Weiner](#)
- **Web Master:** [Piers Dawe](#)
  
- **TP2 weekly call leader:** [Tom Lindsay](#)
- **TP3 weekly call leader:** [Jim McVey](#)
  
- **Channel Ad hoc Chair:** [Ian White](#)
  - **Task 1 (OM1, OM2, OM3 & connectors) leader:** [Richard Penty](#)
  - **Task 2 (Time variation of channel & MN):** [Jonathan King](#)
  - **Task 3 (Input-output parameters) leader:** [Lars Thon](#)
  - **Task 4 (Launch & Mode Filtering) leader:** [Yu Sun](#)
  - **Task 5 (Validation) leader:** [Nick Weiner](#)

## REFLECTOR AND WEB

There is a reflector set up

To subscribe, use this URL:

- <http://ieee802.org/3/aq/reflector.html>

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- `stds-802-3-10gmmf <yourfirstname> <yourlastname>  
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The IEEE 802 web page URL:

<http://ieee802.org/3>

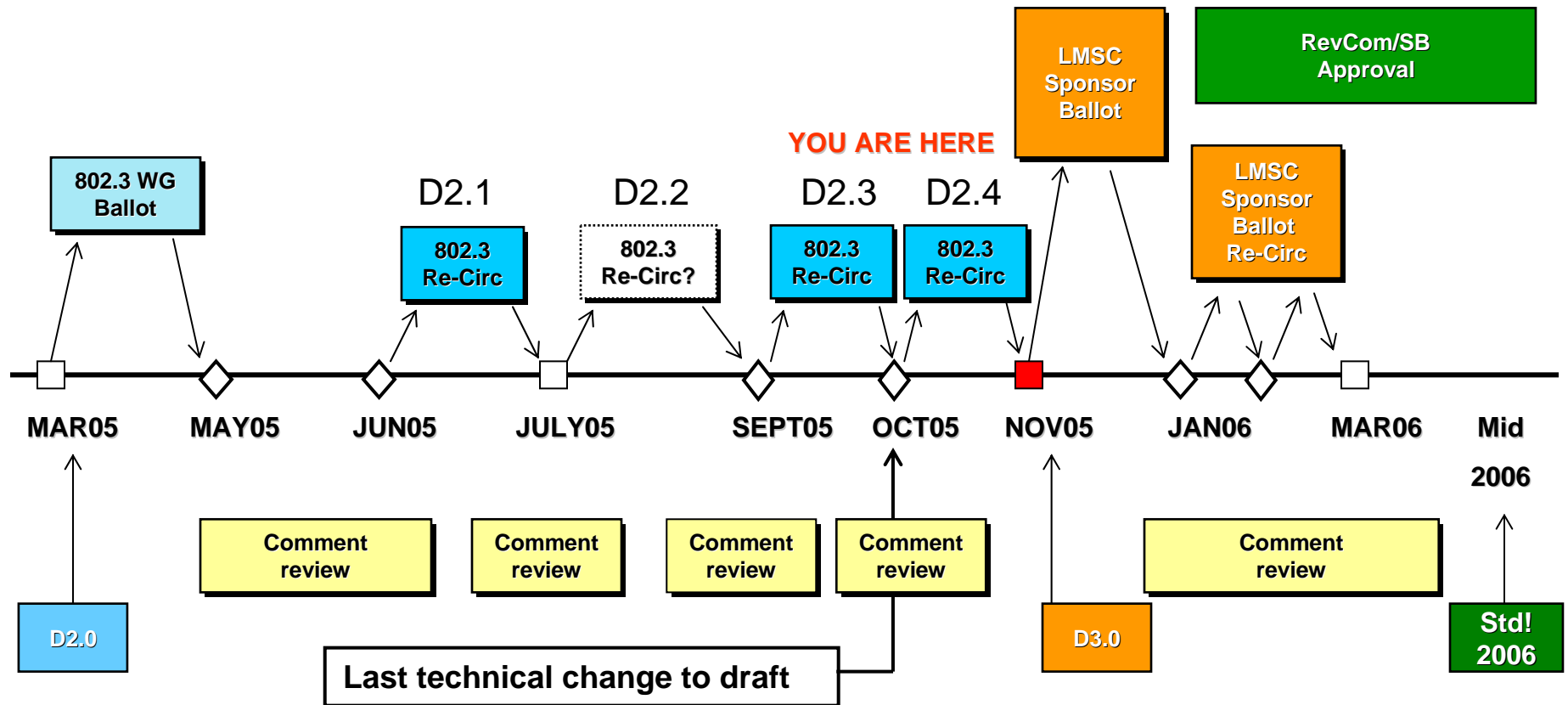
10GBASE-LRM web page URL:

- <http://ieee802.org/3/aq>

# OBJECTIVES

- **Use the existing 10GBASE-R PCS**
- **Support a BER of better than or equal to  $10^{-12}$**
- **Support fiber media selected from IEC 60793-2-10: 2003**
- 62.5 $\mu$ m
  - 160/500 MHz-km (A1b, 60793-2-10:2003)
  - 200/500 MHz-km (A1b, 60793-2-10:2003)
- 50 $\mu$ m
  - 500/500 MHz-km (A1a.1, 60793-2-10:2003)
  - 400/400 MHz-km (A1a.1, 60793-2-10:2003)
  - 1500/500 MHz-km (A1a.2, 60793-2-10:2003)
- **Provide a Physical Layer specification which supports link distances of:**
  - at least 220m on installed 500MHz.km multimode fiber
  - at least 300m on selected multimode fiber

# Timeline: 10GBASE-LRM Working Group and Sponsor Ballots.



## Recent Meeting Dates & Places

- **D2.2 Comment resolution:**  
**Nashua, NH, USA, USA 14 – 16 September 2005**
- **D2.3 Comment resolution:**  
**Corning, NY, USA, 10 – 12 September 2005**
- **Both meetings were well attended.**
- **D2.4 created and sent for reconfirmation ballot after the Corning meeting.**

## Working Group Confirmation Ballot Results

	D2.0	D2.1	D2.2	D2.3	D2.4
Voters	206	206	206	206	206
Approve	72	86	95	99	103
Disapprove	22	22	19	18	17
Abstain	9	4	6	6	6
Returns	103	112	120	123	126
Comments T	85	25	10	14	2
Comments TR	107	44	51	16	14
Comments E	209	64	37	22	10
Comments ER	57	5	8	2	1
Comments	458	138	106	54	27
RespRate	<b>50.00%</b>	<b>54.37%</b>	<b>58.25%</b>	<b>59.71%</b>	<b>61.17%</b>
AppRate	<b>76.60%</b>	<b>79.63%</b>	<b>83.33%</b>	<b>84.62%</b>	<b>85.83%</b>
AbsRate	<b>8.74%</b>	<b>3.57%</b>	<b>5.00%</b>	<b>4.88%</b>	<b>4.76%</b>
New Disapprove	22	2	0	0	2

Thank you for voting and submitting comments.



## Status of the 10GBASE-LRM Project Draft.

- D2.4 has increased the approval rate for the draft.
- Assuming we make no changes to the draft this week, D2.4 will be our last Working Group ballot draft.
- We may have one more recirculation of unsatisfied comments against D2.4.
- If there is to be are recirculation then we will ask IEEE 802.3 for conditional approval to move to Sponsor Ballot after the recirculation.
- Otherwise we will move to Sponsor Ballot out of this meeting.

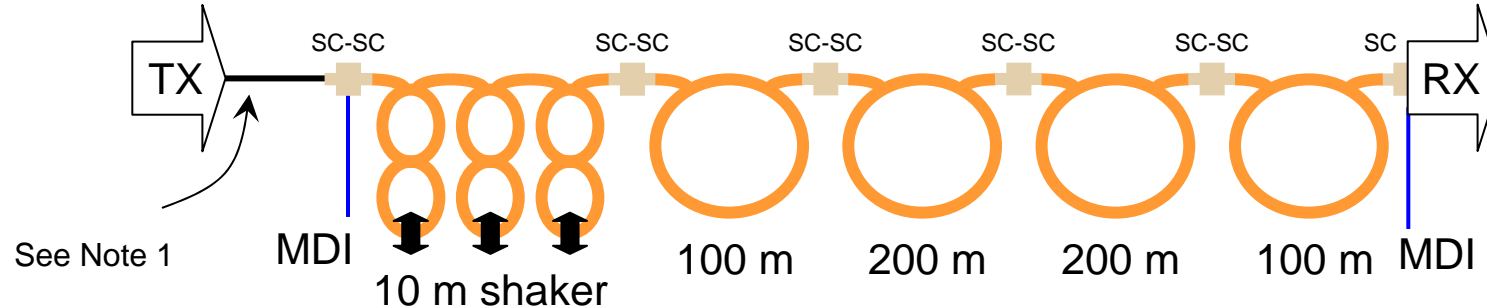
# Interoperability TIA Round Robin Fibers

<b>OM1 1-Green 300m</b>				
	A RX	B RX	C RX	D RX
A TX		PASS	PASS	PASS
B TX	PASS		PASS	PASS
C TX	PASS	PASS		PASS
D TX	PASS	PASS	PASS	
<b>OM1 2-Orange 300m</b>				
	A RX	B RX	C RX	D RX
A TX		PASS	PASS	PASS
B TX	PASS		PASS	PASS
C TX	PASS	PASS		PASS
D TX	PASS	PASS	PASS	
<b>OM2 4-Orange 300m</b>				
	A RX	B RX	C RX	D RX
A TX		PASS	PASS	PASS
B TX	PASS		PASS	PASS
C TX	PASS	PASS		PASS
D TX	PASS	PASS	PASS	
<b>OM3 Orange/Red 300m</b>				
	A RX	B RX	C RX	D RX
A TX		PASS	PASS	PASS
B TX	PASS		PASS	PASS
C TX	PASS	PASS		PASS
D TX	PASS	PASS	PASS	

Pass = no errors in 5 minutes (>95%confidence of BER <10<sup>-12</sup>)

# Interoperation Over 600m Of Nominal OM1 Fiber

OM1 Nominal 600 meters (100m, 200m, 200m, 100m)				
	A RX	B RX	C RX	D RX
A TX		not tested	not tested	not tested
B TX	not tested		Pass	Pass
C TX	not tested	Pass		Pass
D TX	not tested	Pass	Pass	



- To provide a data point for comparison to earlier 10GE interop testing, combined 4 segments of 'nominal' OM1 fiber totaling 600m. Nominal fiber = random purchase early 2004; did not specify any special characteristics.
- Testing was performed at the end of the interop period, and the matrix was not completed due to lack of time.
- Note 1: At the request of some vendors, all vendors included a SMF and optionally an optical attenuator between their MDI and the MDI defined for these interoperation tests. This was to ensure that their receivers received a compliant optical power level but avoided receiver overload.
- Note 2: This is not meant in any way to imply that LRM PMD's are suitable for 600m use, but that with nominal links, there is margin to the 220m distance specification.

# October Technical Motion on Interoperation

## Motion 1

- Move to accept this report as fulfillment of the requirements of the motion quoted below from the November 2004 10GBASE-LRM meeting as a prerequisite to Sponsor Ballot;
    - Motion # 3 Move that IEEE 802.3aq demonstrate a 10<sup>-12</sup> BER over the rated distance on a specified channel (TBD) and show interoperability between PMD's of at least three vendors for 10GBASE-LRM to support technical feasibility prior to sponsor ballot
  - Moved: Dan Rausch
  - Seconded: Lew Aronson
  - Results: For: 24      Against: 11      Abstain: 0
- Motion fails

## LRM Motion 2 (Technical) to IEEE802.3 July05

### ***Motion to request that the IEEE 802.3 Working Group:***

If the working group ballot process terminates (no new negative votes and no technical change) and,

the TF agrees that the requirements of motion 3 of November 04 on interoperation demonstration are fulfilled,

authorize the IEEE 802.3 WG chair to submit D3.0 for Sponsor ballot.

Technical ballot comments with respect to the satisfaction of the interoperation requirement shall not be ruled out of scope.

**Moved:** David Cunningham

**Y: 58 N:10 A:21**

## **Request that IEEE 802.3 Voters familiarize themselves with the 10GBASE-LRM Interoperation Report**

Please review October Interoperation report and it's update on the 10GBASE-LRM October and November meeting pages.

If you can please attend the presentation entitled **“10GBASE-LRM Interoperability Report with supplementary material.”**

This subject is likely to come before 802.3 on Thursday when I ask to go to Sponsor Ballot.

## GOALS FOR THIS MEETING

- **Complete comment resolution on Draft P802.3aq/D2.4.**
- **Proceed to Sponsor Ballot or obtain conditional permission to start Sponsor Ballot.**

<b>Tuesday 15th November 2005</b>			
<b>Presenter</b>	<b>Topic</b>	<b>Length</b>	<b>Start</b>
Chair	Opening Session	00:30:00	<b>08:30</b>
	Appoint Recording Secretary		
	Goals for the Meeting, Project Status and Timeline etc.,		
	Approve Minutes		
Nick Weiner	Editors Report	00:10:00	<b>9:00 AM</b>
	<b>General</b>		
John Abbott	Revised OM2 Monte Carlo modeling set	00:20:00	<b>9:10 AM</b>
John Abbott	Issues with LRM OM3 Monte Carlo modeling	00:20:00	<b>9:30 AM</b>
	<b>Break</b>	00:20:00	<b>9:50 AM</b>
Jonathan King	Split Symmetric Test	00:20:00	<b>10:10 AM</b>
Ali Ghiasi	LRM Requires Comprehensive Jitter Tolerance for Interoperability	00:20:00	<b>10:30 AM</b>
Tom Lindsay	Analysis of connector losses and correlation with dispersion penalty	00:20:00	<b>10:50 AM</b>
Jim McVey	10GBASE-LRM Interoperability Report with supplementary material	01:00:00	<b>11:10 AM</b>
	<b>Lunch</b>	01:30:00	<b>12:10 PM</b>
Chair	General Session or Start comment review	01:10:00	<b>1:40 PM</b>
	<b>Break</b>	00:30:00	<b>2:50 PM</b>
Nick Weiner	Comment Review	03:00:00	<b>3:20 PM</b>
	<b>Stop for day</b>		<b>6:20 PM</b>
<b>Wednesday 11th October 2005</b>			
<b>Presenter</b>	<b>Topic</b>	<b>Length</b>	<b>Start</b>
Nick Weiner	Comment Review	02:00:00	<b>08:00</b>
	<b>Break</b>	00:20:00	<b>10:00 AM</b>
Nick Weiner	Comment Review	01:40:00	<b>10:20 AM</b>
	<b>Lunch</b>	01:30:00	<b>12:00 PM</b>
Nick Weiner	Comment Review	01:30:00	<b>1:30 PM</b>
	<b>Break</b>	00:20:00	<b>3:00 PM</b>
Chair	Closing Session: Stop at 1800 HRS	00:20:00	<b>3:20 PM</b>