AGENDA & MINUTES (Unconfirmed) - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING

Friday, July 25, 2003 – 1:00 p.m.

Hyatt Regency – San Francisco, CA

1. MEETING CALLED TO ORDER

Paul Nikolich called the meeting to order at 1:00pm. Members in attendance were:

Paul Nikolich	- Chair, IEEE 802 LAN / MAN Standards Committee
Geoff Thompson	- Vice Chair, IEEE 802 LAN / MAN Standards Committee
Mat Sherman	- Vice Chair, IEEE 802 LAN / MAN Standards Committee
Buzz Rigsbee	- Executive Secretary, IEEE 802 LAN / MAN Standards Committee
Bob O'Hara	- Recording Secretary, IEEE 802 LAN / MAN Standards Committee
Bill Quackenbush	- Treasurer, IEEE 802 LAN/MAN Standards Committee
Tony Jeffree	- Chair, IEEE 802.1 - HILI Working Group
Bob Grow	- Chair, IEEE 802.3 - CSMA/CD Working Group
Stuart Kerry	- Chair, IEEE 802.11 - Wireless LANs Working Group
Bob Heile	- Chair, IEEE 802.15 – Wireless PAN Working Group
Roger Marks	- Chair, IEEE 802.16 – Broadband Wireless Access Working Group
Mike Takefman	- Chair, IEEE 802.17 – Resilient Packet Ring Working Group
Carl Stevenson	- Chair, IEEE 802.18 – Radio Regulatory TAG
Jim Lansford	- Chair, IEEE 802.19 – Coexistence TAG

The meeting was attended by approximately 25 IEEE 802 Working Group members, IEEE staff, and several guests.

2.00 APPROVE OR MODIFY AGENDA

AGENDA - IEEE 802 LMSC EXECUTIVE COMMITTEE MEETING **Rev 3**

Friday, July 25, 2003 - 1:00PM -6:00PM

Hyatt Regency, San Francisco, CA

1.00		**MEETING CALLED TO ORDER**	**-**	**Nikolich**	**1**	**01:00 PM**
2.00	**MI**	**APPROVE OR MODIFY AGENDA**	**-**	**Nikolich**	**5**	**01:01 PM**
3.00	**MI***	**Approve the minutes of the March 2003 meeting**	**-**	**Nikolich**	**5**	**01:06 PM**
3.01	**II**	**Announce the results of the Wednesday Executive session**	**-**	**Nikolich**	**5**	**01:11 PM**
3.02	**MI**	**Approve the minutes of the Wednesday Executive session**	**-**	**Thompson**	**10**	**01:16 PM**
4.00	**II**	**TREASURER'S REPORT**	**-**	**Quackenbush**	**5**	**01:26 PM**
4.01	**II**	**802 Project Plan**	**-**	**Sherman**	**5**	**01:31 PM**
	Category (* = consent agenda)		**-**			
			-			
5.00		**IEEE Standards Board Items**	**-**			**01:36 PM**
5.01	**ME**	**Reaffirmation of 802.5 standards to RevCom**	**-**	**Takefman**	**5**	**01:36 PM**
5.02	**ME**	**802.16/conformance02/D3 to sponsor ballot**	**-**	**Marks**	**5**	**01:41 PM**
5.03	**ME**	**802.3aj to RevCom**	**-**	**Grow**	**5**	**01:46 PM**
5.04	**ME**	**Conditional approval to send 802.3ak to sponsor ballot**	**-**	**Grow**	**5**	**01:51 PM**
5.05	**ME**	**Revised 802.16d PAR to NesCom**	**-**	**Marks**	**5**	**01:56 PM**
5.06	**ME**	**Revised 802.16.2a PAR to NesCom**	**-**	**Marks**	**5**	**02:01 PM**
5.07	**ME**	**Withdrawal of 802.10 standards**	**-**	**Jeffree**	**5**	**02:06 PM**
5.08	**ME**	**Conditional approval to send 802b to sponsor vallot**	**-**	**Jeffree**	**5**	**02:11 PM**
5.09	**ME**	**Conditional approval to send 802.1aa to sponsor ballot**	**-**	**Jeffree**	**5**	**02:16 PM**
5.10	**ME**	**Conditional approval to send 802.1D to sponsor ballot**	**-**	**Jeffree**	**5**	**02:21 PM**
5.11	**ME**	**802.1Q reaffirmation to RevCom**	**-**	**Jeffree**	**5**	**02:26 PM**

5.12	ME	802.1X Revision PAR to NesCom	-	Jeffree	5	02:31 PM
5.13	ME	802.1Q Revision PAR to NesCom	-	Jeffree	5	02:36 PM
5.14	ME	802.1AE (MAC Security) PAR to NesCom	-	Jeffree	5	02:41 PM
5.15	ME	Issue reaffirmation ballot for 802.1F	-	Jeffree	5	02:46 PM
5.16	ME	802.15.1a Revision PAR to NesCom	-	Hiele	5	02:51 PM
5.17	ME	Submit 802.11-1999 2003 edition to ISO	-	Kerry	5	02:56 PM
5.18	ME	802.11n (High Throughput) PAR to NesCom	-	Kerry	5	03:01 PM
5.19	ME	Submit 802.11h to RevCom	-	Kerry	5	03:06 PM
			-			03:11 PM
6.00		Executive Committee Study Groups & Working Groups	-			03:11 PM
6.01	MI	Confirm 802.16 vice chair	-	Marks	5	03:11 PM
6.02	MI	Disband 802.10 working group	-	Jeffree	5	03:16 PM
6.03	MI	Extension of 802.3 10GBASE-T study group	-	Grow	5	03:21 PM
6.04	MI	Extension of 802 Handoff ECSG	-	Johnston	5	03:26 PM
6.05	MI	Approval of study group for 802.15.4 alternate PHY	-	Hiele	5	03:31 PM
6.06	MI	Approval of study group for 802.11 DSRC modifications to the 5GHz PHY	-	Kerry	5	03:36 PM
6.07	MI	Approval of study group for 802.11 fast roaming/fast handoff	-	Kerry	5	03:41 PM
7.00		Break	-		12	03:46 PM
8.00		IEEE-SA Items	-			03:58 PM
8.01	II	Get IEEE 802 Program update	-	Rupp	5	03:58 PM
8.02	II	Front matter update	-	Thompson/Yvette	2	04:03 PM
8.03	II	IEEE-SA/ IEEE CS rules update	-	Sherman	5	04:05 PM
8.04	II	EMS implementation update	-	Frazier	5	04:10 PM
9.00		LMSC Liaisons & External Interface	-			04:15 PM
9.01	ME	placeholder 1	-	Stevenson	2	04:15 PM
9.02	ME	Placeholder 2	-	Stevenson	2	04:17 PM
9.03	II	Liaison contribution from 802.1 to ITU Q12/15	-	Jeffree	2	04:19 PM
9.04	ME	802.11n press release	-			04:21 PM
9.05			-			04:21 PM
9.06			-			04:21 PM
9.07			-			04:21 PM
9.08			-			04:21 PM
9.09			-			04:21 PM
9.10			-			04:21 PM
10.00		LMSC Internal Business	-			04:21 PM
10.01	MI	Approval of Unpaid Attendees P&P change	-	Quackenbush	5	04:21 PM
10.02	MI	Approval of WG Membership P&P change	-	Sherman	5	04:26 PM
10.03	MI	Approval of Appeals Process P&P change	-	Sherman	5	04:31 PM
10.04	MI	Approval of EC Name Change P&P change	-	Sherman	5	04:36 PM
10.05	MI	Send Order of Precedence P&P change to ballot	-	Sherman	5	04:41 PM
10.06	MI	Send Treasury-related P&P change to ballot	-	Quackenbush	5	04:46 PM
10.07	MI	Approval of equipment expenses	-	Quackenbush	5	04:51 PM
10.08	MI	Approved expenditure for production of 802 standard CD-ROM	-	Quackenbush	5	04:56 PM
10.09	MI	Approval of meeting planner expenses and extension of contract	-	Quackenbush	5	05:01 PM
10.10	MI	Approval of memo on investigation of WG financial operations	-	Quackenbush	10	05:06 PM
10.11	MI	Increase budget for Networking at plenary sessions	-	Quackenbush	5	05:16 PM
10.12	MI	Confirm LMSC contract with IDEAL	-	Quackenbush	5	05:21 PM
10.13	MI	Approve 802.11/15 contract with IDEAL	-	Heile	2	05:26 PM
10.14			-			05:26 PM
10.15			-			05:26 PM
10.16			-			05:26 PM
11.00		Information Items	-			05:26 PM
11.01	II	announcement of appointment of Gary Robinson to Chair 802.20	-	Nikolich	2	05:26 PM

		WG				
11.02	**II**	**802.20 WG status update**	**-**	**Robinson**	**5**	**05:28 PM**
11.03	**II**	**802.3ak presubmit to December RevCom**	**-**	**Grow**	**2**	**05:33 PM**
11.04	**II**	**802.3 actions this week**	**-**	**Grow**	**5**	**05:35 PM**
11.05	**II**	**802 Handoff ECSG Report**	**-**	**Johnston**	**5**	**05:40 PM**
11.06	**II**	**Interim meetings**	**-**	**Nikolich**	**2**	**05:45 PM**
11.07	**II**	**802 News Bulletin**	**-**	**Klerer**	**10**	**05:47 PM**
11.08	**II**	**802.1 formation of Link Sec task group**	**-**	**Jeffree**	**2**	**05:57 PM**
11.09	**II**	**Future meetings**	**-**	**Rigsbee**	**10**	**05:59 PM**
11.10	**II**	**Process to review attendance software**	**-**	**Heile**	**5**	**05:59 PM**
11.11	**II**	**802.18 status**	**-**	**Stevenson**	**1**	**05:59 PM**
11.12	**II**	**802.19 status**	**-**	**Lansford**		**05:59 PM**
11.13			**-**			**05:59 PM**
		ADJOURN SEC MEETING	**-**	**Nikolich**		**06:00 PM**
		ME - Motion, External MI - Motion, Internal				
		DT- Discussion Topic II - Information Item				

Items in the proposed agenda that are on the consent agenda are shown as highlighted in yellow.

2.00	**MI**	**APPROVE OR MODIFY AGENDA**	**-**	**Nikolich**	**5**	**01:01 PM**

Move/Second: Stevenson/Grow

12/0/1 Approved as modified at 1:06 pm

3.00	**MI***	**Approve the minutes of the March 2003 meeting**	**-**	**Nikolich**	**5**	**01:06 PM**

Moved: Sherman/Quackenbush
Fails: 0/12/1

3.01	**II**	**Announce the results of the Monday Executive session**	**-**	**Nikolich**	**5**	**01:11 PM**

Paul announced that a decision to discipline the chairs of 802.11 and 802.15 regarding financial issues.

3.02	**MI**	**Approve the minutes of the Wednesday Executive session**	**-**	**Thompson**	**10**	**01:16 PM**

Minutes of the Executive Session of the 802 LMSC Executive Committee
Monday, July 21, 2003 – Hyatt Regency, San Francisco

The meeting was called to order at 10:01pm by Paul Nikolich.

Attending the meeting were the following persons:

Paul Nikolich	- Chair, IEEE 802 LAN / MAN Standards Committee
Geoff Thompson	- Vice Chair, IEEE 802 LAN / MAN Standards Committee
Mat Sherman	- Vice Chair, IEEE 802 LAN / MAN Standards Committee
Buzz Rigsbee	- Executive Secretary, IEEE 802 LAN / MAN Standards Committee
Bob O'Hara	- Recording Secretary, IEEE 802 LAN / MAN Standards Committee
Bill Quackenbush	- Treasurer, IEEE 802 LAN/MAN Standards Committee
Tony Jeffree	- Chair, IEEE 802.1 - HILI Working Group
Bob Grow	- Chair, IEEE 802.3 - CSMA/CD Working Group
Stuart Kerry	- Chair, IEEE 802.11 - Wireless LANs Working Group
Bob Heile	- Chair, IEEE 802.15 – Wireless PAN Working Group
Roger Marks	- Chair, IEEE 802.16 – Broadband Wireless Access Working Group
Mike Takefman	- Chair, IEEE 802.17 – Resilient Packet Ring Working Group
Carl Stevenson	- Chair, IEEE 802.18 – Regulatory TAG
Jim Lansford	- Chair, IEEE 802.19 – Coexistence TAG
Jim Carlo	- IEEE-SA President Elect
Karen Rupp	- IEEE Staff

WHEREAS, alleged financial irregularities have come to the attention of the Executive Committee (EC) of the LAN/MAN Standards Committee (LMSC); and these alleged irregularities have been studied by an investigative committee appointed by the LMSC Chair; and that investigative committee reports:

1. Mr. Kerry and Mr. Heile have respectively operated the 802.11 and 802.15 Working Groups with treasury;
2. Mr. Kerry and Mr. Heile have failed to conform to IEEE financial management procedures;
3. Mr. Kerry and Mr. Heile have failed to comply with IEEE policies for budgeting and audits;
4. Mr. Kerry and Mr. Heile have operated their Working Groups in violation of LMSC P&P financial reporting requirements;
5. Mr. Kerry and Mr. Heile have operated their Working Groups in violation of their Working Group rules on financial operations;

6. Mr. Kerry and Mr. Heile have jeopardized LMSC's relationship with superior bodies by not reporting the treasury to the LMSC Treasurer as required;
7. Mr. Kerry's and Mr. Heile's failure to provide financial reports has caused that significant financial matters were not properly reported to the Computer Society or IEEE-SA within the LMSC's annual financial report; and
8. Mr. Kerry and Mr. Heile have exceeded their authority as WG Chairs by entering into a software development agreement with an outside vendor with a minimum amount of $75,000 that spans three sessions, and have done this without authorization of the Executive Committee.

WHEREAS, there is no allegation or evidence of misappropriation or malfeasance, Mr. Kerry and Mr. Heile have fully reported financial operations to their Working Groups, the actions taken by Mr. Kerry and Mr. Heile were with the consensus of their Working Groups, and Mr. Kerry and Mr. Heile have committed to do everything necessary to bring the operation of their Working Groups into compliance in a timely way, including but not limited to:

1. open a checking account compliant with IEEE title and signatory policies and transfer all funds into that account;
2. file financial reports with the LMSC Treasurer for each interim session beginning with calendar year 2002;
3. have calendar year 2002 operations audited by IEEE Audit Operations;
4. seek modification of Working Group rules as necessary to be consistent with operation with treasury;
5. to fully report on the software development agreement to the EC and their Working Groups;
6. and to seek ratification of the software development agreement by the EC.

THEREFORE BE IT RESOLVED, the Executive Committee of the LAN/MAN Standards Committee does hereby formally reprimand Mr. Stuart Kerry, Chair of the IEEE 802.11 Working Group and Mr. Robert Heile, Chair of the IEEE 802.15 Working Group for breach of their fiduciary duties.

FURTHER RESOLVED, that Mr. Kerry and Mr. Heile are directed to bring their Working Groups into full compliance with LMSC P&P and with the requirements of all superior IEEE bodies by 31 August 2003.

FURTHER RESOLVED, that the LMSC Treasurer provide appropriate guidance for specific tasks required to meet the 31 August 2003 compliance date, and that the LMSC Treasurer report to the EC on the success or failure of Mr. Kerry and Mr. Heile to bring their Working Group operations into compliance.

FURTHER RESOLVED, that the LMSC EC reserves the right to take appropriate additional actions as justified by any additional irregularities discovered, any insufficiency in mitigating the current situation or in bringing 802.11 and 802.15 operations into compliance.

Moved: Bob Grow
Seconded: Geoff Thompson
Passes: 10/0/0

Action item: Bill Quackenbush to update his plan of action memo for submission to the IEEE-SA BoG.
Action item: Bill Quackenbush to describe the status of each of the Working Groups (802.11, 802.15, and 802.17) in their process of complying with the action plan
Action item: Bill Quackenbush to propose P&P changes to address Working Group financial operations

Meeting in executive session was adjourned at 12:31am, July 22, 2003.

Moved: Jeffree/Thompson

Question: How is this to be presented to the members of 802 and the affected working groups?
This will be presented by someone from the executive committee to the working groups at the next interim meeting and also at the November plenary session.

Passes: 10/0/1

4.00 II TREASURER'S REPORT - Quackenbush 5 01:26 PM

IEEE Project 802
Estimated Statement of Operations
July 2003 Plenary Session
San Francisco, CA
As of July 25, 2003

Meeting Income	*Estimate*	*Budget*	*Variance*
Registrations	**1,374**	1,100	274
Registration income	**445,900**	346,500	99,400
Deadbeat collections	**700**	0	700
Bank interest	**75**	150	(75)
Other income	**0**	0	0
TOTAL Meeting Income	**446,675**	346,650	100,025

Meeting Expenses	*Estimate*	*Budget*	*Variance*
Audio Visual Rentals	**9,603**	10000	397
Audit	**4,509**		(4,509)
Bank Charges	**285**	278	(7)
Copying	**3,300**	5500	2,200
Credit Card Discount	**12,039**	9356	(2,684)
Equipment Purchase	**3,300**	7000	3,700
Get IEEE 802 Contribution	**103,050**	82500	(20,550)
Insurance	**0**	0	0
Meeting Administration	**69,200**	60760	(8,440)
Misc Expenses	**1,612**	1000	(612)
Network	**35,088**	30500	(4,588)
Phone & Electrical	**1,000**	2100	1,100
Refreshments	**104,398**	88000 **(1)**	(16,398)
Shipping	**500**	2000	1,500
Social	**93,513**	38500 **(2)**	(55,013)
Supplies	**1,200**	500	(700)
TOTAL Meeting Expense	**442,597**	337,994	(104,604)
NET Meeting Income/Expense	**4,078**	8,657	(4,579)

Notes				
	(1) Refreshments per registration	**76**	80	4
	(2) Social per registration	**68**	35	(33)

Estimated Other Liabilities	**0**
July 2003 Operating Reserve	**220,344**
Projected Novenber 2003 Operating Reserve	**224,422**

About 52% preregistered, compared to higher numbers at previous meetings.

Moved: To authorize the expenditure of $600 to cover the cost of the guests at the Ethernet dinner
Moved: Thompson/Stevenson
Passes: 13/0/0

4.01	**II**	**802 Project Plan**	**-**	**Sherman**	**5**	**01:31 PM**

Paul will get in touch with everyone to update the plan.

5.00		**IEEE Standards Board Items**	**-**			**01:36 PM**
5.01	**ME**	**Reaffirmation of 802.5 standards to RevCom**	**-**	**Takefman**	**5**	**01:36 PM**

Moved: to send 802.5 standards to RevCom for reaffirmation
Moved: Takefman/Kerry

Bob Grow points out that his recirculation comment is not addressed in the package that accompanied the email requesting the reaffirmation.

Passes: 10/0/2

5.02	**ME**	**802.16/conformance02/D3 to sponsor ballot**	**-**	**Marks**	**5**	**01:41 PM**

Moved: To forward 802.16/conformance02/D3 to sponsor ballot
Moved: Marks/Stevenson
Passes: 12/0/0

5.03	**ME**	**802.3aj to RevCom**	**-**	**Grow**	**5**	**01:46 PM**

Moved: To forward 802.3aj/D3.1 Maintenance #7 to RevCom
Moved: Grow/Jeffree
Passes: 12/0/0

5.04	**ME**	**Conditional approval to send 802.3ak to sponsor ballot**	**-**	**Grow**	**5**	**01:51 PM**

Moved: To forward 802.3ak to sponsor ballot under Procedure 10.
Moved: Grow/Jeffree
Passes: 12/0/0/

5.05	**ME**	**Revised 802.16d PAR to NesCom**	**-**	**Marks**	**5**	**01:56 PM**

Moved: To forward the revised PAR for 802.16d to NesCom
Moved: Marks/Thompson

Question: why is the letter on the PAR?
There is an 802 procedure that requires that all projects have a letter designation.
IEEE staff points out that editorial convention is to designate the document without a letter.

Passes: 12/0/0

5.06	**ME**	**Revised 802.16.2a PAR to NesCom**	**-**	**Marks**	**5**	**02:01 PM**

Moved: To forward the revised PAR for 802.16a to NesCom
Moved: Marks/Stevenson
Passes: 13/0/0

5.07	**ME**	**Withdrawal of 802.10 standards**	**-**	**Jeffree**	**5**	**02:06 PM**

Moved: to request administrative withdrawal of the 802.10-1998, 802.10a-1999, and 802.10c-1998 security standards.
Moved: Jeffree/Grow

There is only one IP statement and it states that the submitters IP is not believed essential to the standard.
This will result with every 802 standard having obsolete and incorrect front matter.

Passes: 13/0/0

Moved: The SEC resolves to conduct a letter ballot to disband the 802.10 working group, to be initiated once the 802.10 security standards have been withdrawn.
Moved: Jeffree/Stevenson

This motion is made on behalf of the chair of the hibernating working group.
This has been on the SEC reflector for at least 30 days without any objections.

Passes: 13/0/0

5.08	**ME**	**Conditional approval to send 802b to sponsor ballot**	**-**	**Jeffree**	**5**	**02:11 PM**

Moved: To forward 802b to sponsor ballot under Procedure 10.
Moved: Jeffree/Grow

Supporting information – 802b

- The 802b Working Group ballot closed 7th July 2003. The ballot passed with 100% approval and no abstentions. 27 voters (79% of the voting membership) responded to the ballot.
- There are a small number of minor editorial comments; these changes will be recirculated in the July/August timeframe.

Passes: 13/0/0

5.09	**ME**	**Conditional approval to send 802.1aa to sponsor ballot**	**-**	**Jeffree**	**5**	**02:16 PM**

5

Moved: To forward 802.1aa to sponsor ballot under Procedure 10.
Moved: Jeffree/Grow

Supporting information – 802.1aa

- The 802.1aa Working Group ballot closed 17th July 2003. The ballot passed with 77% approval and three abstentions. 30 voters (88% of the voting membership) responded to the ballot.
- There are 7 negative ballots with comments; a new draft the consequent changes and comment resolutions will be recirculated in the July/August timeframe.

802.1aa's PAR is being changed to a revision of 802.1X. In the future, this project will be known as 802.1X rev. This is a perfect example of the trouble inherent in naming revisions in a different "address space" and the difficulty in tracking such projects.

Passes: 5/2/6

5.10	**ME**	**Conditional approval to send 802.1D to RevCom**	**-**	**Jeffree**	**5**	**02:21 PM**

Moved: To forward conditionally 802.1D to RevCom following successful completion of its upcoming sponsor recirculation ballot.
Moved: Jeffree/Stevenson

Supporting information – 802.1D

- The 802.1D Sponsor ballot closed 17th July 2003. The ballot passed with 97% approval and two abstentions. 46 voters (86% of the balloting group) responded to the ballot.
- There are a number of editorial and technical changes to be made; these will be recirculated in the July/August timeframe. The one negative vote cannot be resolved, as it would be contrary to the scope of the standard. The next slide shows that comment and the WG rebuttal; these will be included in the recirc package.

Supporting information – 802.1D - rebuttal

- **Satoshi Obara**

- comment_type = Technical
- comment = Many existing Layer 2 Switches and MAC Bridges are still using STP protocol in the worldwide. Even if more than ten vendors ship their product with RSTP, it is difficult to decide that RSTP becomes popular protocol in real network systems in this two years. The removal of STP may causes great confusion for network users and network industries. The removal of STP is too early.
- suggested_remedy = RSTP should be option. And restore all STP descriptions.

- ***Reject.*** The "Scope of Proposed Project" in the PAR for this revision explicitly states that the removal of the Spanning Tree protocol is a part of the scope of this project. Therefore, to accept this comment would result in the project failing to fulfil its scope. There are a number of reasons why the decision was made to include this element in the scope of the project:
- RSTP represents current "best practice" in standardised Spanning Tree technology, and offers significant performance improvements over the STP protocol. We believe that the role of standardisation is to reflect best practice, rather than to perpetuate obsolete technologies;
- RSTP is backwards compatible with STP Bridges, and can therefore be integrated with networks containing STP Bridges without affecting the operation of the STP Bridges;
- To continue to retain STP in the standard and have it work with other ongoing developments would require us to actively maintain an obsolete protocol. Given the lack of interest in new im plementations of STP, it is unlikely that this could be done to a satisfactory standard;
- Although this revision will supersede previous versions of the standard, they will nevertheless remain in existence in archives, and can therefore be accessed if necessary;
- The real uses to which LAN technologies are being put in modern networks include applications (such as voice telephony) that cannot be satisfactorily supported using STP Bridges, but can be supported by RSTP Bridges. Perpetuating STP artificially restricts the applicability of 802 technology.

Passes: 11/0/2

5.11	**ME**	**802.1Q reaffirmation to RevCom**	**-**	**Jeffree**	**5**	**02:26 PM**

Moved: To forward the 802.1Q and its amendments (802.1u, 802.1v, and 802.1s) to RevCom
Moved: Jeffree/Stevenson

Supporting information: Q Reaffirmation

- The reaffirmation ballot closed on 2003-06-05. 36 people (80% of the balloting group) responded, of which 2 were abstentions. The ballot received 100% approval.
- Bob Grow submitted two comments to the effect that:
  - Q and its amendments should be merged into one version. This action has already completed; the 2003 Edition of 802.1Q is now available;
  - “If I have noted correctly, 802.1z will be the fifth document in the 802.1Q set. I strongly recommend that if it is to be completed soon, it be published as part of a consolidated edition. If approval is not likely soon, I recommend a consolidated edition of 802.1Q and its currently approved amendments be created.” The above noted action, plus the conversion of 802.1z to a Revision PAR (see later motion) achieves the result requested by Bob.

Passes: 13/0/0

5.12	**ME**	**802.1X Revision PAR to NesCom**	**-**	**Jeffree**	**5**	**02:31 PM**

Moved: To forward the 802.1X revision PAR to NesCom.
Moved: Jeffree/Stevenson

Supporting information: X PAR

- The draft PAR is unchanged from the version circulated previously.
- Comments were received from 802.3; these and the 802.1 responses were circulated to the SEC via Email on Wednesday.

Passes: 13/0/0

5.13	**ME**	**802.1Q Revision PAR to NesCom**	**-**	**Jeffree**	**5**	**02:36 PM**

Moved: To forward the 802.1Q revision PAR to NesCom.
Moved: Jeffree/Lansford

Supporting information: Q PAR

- The draft PAR is unchanged from the version circulated previously.
- Comments were received from 802.3; these and the 802.1 responses were circulated to the SEC via Email on Wednesday.

Passes: 13/0/0

5.14	**ME**	**802.1AE (MAC Security) PAR to NesCom**	**-**	**Jeffree**	**5**	**02:41 PM**

Moved: To forward the 802.1AE PAR to NesCom.
Moved: Jeffree/Stevenson

Supporting information: AE PAR

- The draft PAR is unchanged from the version circulated previously.
- Comments were received from 802.3; these and the 802.1 responses were circulated to the SEC via Email on Wednesday.

A point was made that the existing five criteria are entirely one sided, requiring that all MAC working groups are compatible with 802.1, but not that 802.1 must weigh the impact of its work on changes required in other standards.

What happens, since this is dependent on a change in 802.3 for its success, if 802.3 does not make that change?
At the time AE is approved, some expect that the SEC would require that the corresponding change in 802.3 also be available for forwarding. This change to 802.3 may break existing implementations. The effect on 802.11 is not determined.

Passes: 10/0/1

5.15	**ME**	**Issue reaffirmation ballot for 802.1F**	**-**	**Jeffree**	**5**	**02:46 PM**

Moved: To issue a reaffirmation ballot for 802.1F.
Moved: Jeffree/Grow

There is under consideration at the Standards Board, somewhere between active and withdrawn. This may be a good candidate for that status.

Passes: 11/1/1

5.16	**ME**	**802.15.1a Revision PAR to NesCom**	**-**	**Heile**	**5**	**02:51 PM**

Moved: To for ward the 802.15.1a revision PAR to NesCom.
Moved: Heile/Kerry

Does the PAR say 802.15.1a or 802.15.1 rev?
802.15.1a

Is there any formal agreement between the Bluetooth SIG and IEEE on this work? No. There is only a copyright agreement from the original 802.15.1 work. It was pointed out that the work was supposed to be brought into IEEE. It appears that this is a "rubber stamp". Bob Heile said that this is not the case. The goal is still to bring in the work to IEEE. This is still being negotiated.

Is it possible the this standard and Bluetooth 1.2 will be technically different? Yes, it is possible. The alignment of the two standards is dependent on the goodwill of the two groups.

Passes: 11/0/1

5.17	**ME**	**Submit 802.11-1999 2003 edition to ISO**	**-**	**Kerry**	**5**	**02:56 PM**

Moved: To submit the 802.11-1999 (2003 edition) to ISO/IEC for fast track approval through the UK national body
Moved: Kerry/Heile

Agenda#: 5.17
Date: 07/25/03
Time:

IEEE 802 LMSC RESOLUTION

Motion By: KERRY Seconded By: HEILE

Move to submit 802.11-1999 (2003 edition) including 802.11d amendment, to ISO/IEC for Fast Track Approval through the UK national body. Robin Tasker has volunteered to make the submission, and Terry Cole will be the project editor

Approved by the IEEE802.11 Working Groups Passed with unanimous approval.

Approve: Do Not Approve: Abstain:

This does not represent the entire approve 802.11 standard. 802.11g is not included.

Will this edition be available for sale from both IEEE and ISO? Yes, once the ISO version is available, IEEE will sell the ISO version.

Passes: 10/3/0

5.18	**ME**	**802.11n (High Throughput) PAR to NesCom**	**-**	**Kerry**	**5**	**03:01 PM**

Moved: To submit the 802.11n PAR to NesCom
Moved: Kerry/O'Hara

Background for 802.11n PAR

- Initial Meeting Sept. 2002,
- PAR/5C submitted to ExCom March 2003.
  - PAR and 5C were pre-submitted, and as such, the majority of the SEC believed that the PAR was not ready for comment. WG told to submit for July 2003 Plenary.
- PAR/5C submitted to ExCom July 2003
  - Submitted over 30-days prior to Plenary.

Background (Cont)

- PAR subjected to WG Letter Ballot review cycle.
- PAR stable prior to end of March 2003.
- Only one set of comments (7) received.
- All Comments/questions addressed, and response posted to ExCom folders by Wed.
- Follow-up via E-mail done by ExCom Chair

Background (Cont)

- SG approved PAR/5C: 75-0-0
- WG approved PAR/5C: 94-2-5
- Comments reviewed and submitted with PAR and 5C to ExCom
  - SG approved: 97-0-1
  - WG approved: 147-0-3

Agenda#: 5.19
Date: 07/25/03
Time:

IEEE 802 LMSC RESOLUTION

Motion By: KERRY Seconded By: HEILE

Move to forward IEEE 802.11h Draft 3.11 to the the RevCom for final approval.

Working Group Vote Passed 78 : 0 : 1

Approve: Do Not Approve: Abstain:

Passes: 13/0/0

5.19	**ME**	**Submit 802.11h to RevCom**	**-**	**Kerry**	**5**	**03:06 PM**

Moved: To submit 802.11h to RevCom

5 **Moved: Kerry/Heile**

Final Motion in TGh

Move to forward IEEE 802.11h Draft 3.11 to the IEEE 802 SEC and the RevCom for final approval.

Passed in TGh 13-0-0

Some TGh Balloting History

- Draft D3.0 in Sponsor Ballot
  - 77% return ratio
  - 48 affirmative, 4 negative, 5 abstention votes
    - **92% affirmative**
  - 45 comments
- Draft D3.6 in Sponsor 1st Recirculation Ballot
  - 80% return ratio
  - 53 affirmative, 2 negative, 4 abstention votes
    - **96% affirmative**
  - 19 comments

Recent Ballot

- Draft D3.11 in Sponsor 2nd Recirculation Ballot
  - 81% return ratio
  - 56 affirmative, 1 negative, 3 abstention votes
    - **98% affirmative**
  - 2 editorial comments

The Only “No” Vote

- Srinivas Kandala
  - Voted “No” on first sponsor ballot
  - Voted “No” on 1st recirculation ballot
  - Didn’t vote on 2nd recirculation ballot
  - 9 technical comments together from the sponsor ballot and the 1st recirculation ballot

Draft 3.11 Comment Resolutions

- Rejected the two new editorial comments
- Retained the resolutions to the nine Srini's comments
- Comment resolutions in doc 11-03-529

1. **No new technical comments**
2. **All comments rejected**

Status of the Draft

- Comment resolution on Draft 3.11 resulted in no changes to the draft
- Draft 3.11 is the current version of IEEE 802.11h

Agenda#: 5.18
Date: 07/25/03
Time:

IEEE 802 LMSC RESOLUTION

Motion By: KERRY Seconded By: O'HARA

Move to forward 802.11n PAR to NesCom.

SG approved PAR/5C: 75-0-0
WG approved PAR/5C: 94-2-5

Comments reviewed and submitted with PAR and 5C to ExCom
SG approved: 97-0-1
WG approved: 145-0-3

Approve: Do Not Approve: Abstain:

Passes: 12/0/0

6.00		**Executive Committee Study Groups & Working Groups**	**-**			**03:11 PM**
6.01	**MI**	**Confirm 802.16 vice chair**	**-**	**Marks**	**5**	**03:11 PM**

Moved: To confirm Kenneth Stanwood as the vice chair of 802.16.
Moved: Thompson/Kerry
Passes: 12/0/0

6.02	**MI**	**Disband 802.10 working group**	**-**	**Jeffree**	**5**	**03:16 PM**

Dealt with in agenda item 5.07.

6.03	**MI**	**Extension of 802.3 10GBASE-T study group**	**-**	**Grow**	**5**	**03:21 PM**

Moved: to extend the 802.3 10GBASE-T study group through the November plenary meeting.
Moved: Grow/Kerry

Passes: 12/0/0

6.04	**MI**	**Extension of 802 Handoff ECSG**	**-**	**Johnston**	**5**	**03:26 PM**

Moved: To extend the 802 Handoff ECSG through the November plenary.
Get file from DJ Johnston

Moved: Marks/Kerry
Passes: 12/0/0

6.05	**MI**	**Approval of study group for 802.15.4 alternate PHY**	**-**	**Hiele**	**5**	**03:31 PM**

Moved: To approve establishment of 802.15.4 alternate PHY study group and its placement in 802.15
Moved: Heile/Kerry
Passes: 12/0/0

6.06	**MI**	**Approval of study group for 802.11 DSRC modifications to the 5GHz PHY**	**-**	**Kerry**	**5**	**03:36 PM**

Moved: To approve formation of an 802.11 study group to develop and amendment to extend and modify the 802.11 5 GHz PHY to support DSRC technology in the 5.9 GHz DSRC (Dedicated Short Range Communications) band, and incorporate necessary MAC changes.
Moved: Kerry/Heile

Broady Cash presented the work that was done by the ASTC for ITS (Intelligent Transportation System) work and the allocation by the FCC of this band for that purpose. 802.11a was selected as the technology for this work. There is not a large change to the MAC required.

Passes: 10/0/3

6.07	**MI**	**Approval of study group for 802.11 fast roaming/fast handoff**	**-**	**Kerry**	**5**	**03:41 PM**

Moved: To approve formation of an 802.11 study group to develop a PAR for an amendment to extend and modify the 802.11 MAC to support fast roaming/fast handoff with meetings no sooner than November 2003.
Moved: Kerry/Heile

Agenda#: 6.07
Date: 07/25/03
Time:

IEEE 802 LMSC RESOLUTION

Motion By: KERRY Seconded By: HEILE

Move to approve the formation of an 802.11 Study Group to develop a PAR for an amendment to extend and modify the 802.11 MAC to support fast roaming/fast handoff with meetings no sooner than November 2003.

Working Group Vote on the motion: Passes 96 : 2 : 13

Approve: Do Not Approve: Abstain:

Both Stuart Kerry and DJ Johnston stated that the work in the ECSG and this SG are orthogonal to each other. The work of this SG is to address existing 802.11 mechanisms and methods to accomplish them more quickly. The ECSG is to address handoff between different 802 MACs.

Passes: 12/0/1

7.00		**Break**	**-**		**12**	**03:46 PM**
8.00		**IEEE-SA Items**	**-**			**03:58 PM**
8.01	**II**	**Get IEEE 802 Program update**	**-**	**Rupp**	**5**	**03:58 PM**

Q: Have the IEEE geographic portals been sending shoppers to textstreet(?) program? IEEE will begin tracking and reporting that revenue. The new instant draft availability program is up and running through ILI. They will also report that revenue.

In November IEEE will prepare a full review of the Get IEEE 802 program. This is the end of the 3-year initial program. The intent is to make this a permanent program.

Karen clarified that editorial "editions" are not considered standards, according to the current Get IEEE 802 program agreement. This makes them not available through that program.

8.02	**II**	**Front matter update**	**-**	**Yvette Ho Sang**	**2**	**04:03 PM**

IEEE 802® Front Matter

Yvette Ho Sang

Manager, Standards Publishing

25 July 2003

IEEE 802 Template Information

Contains

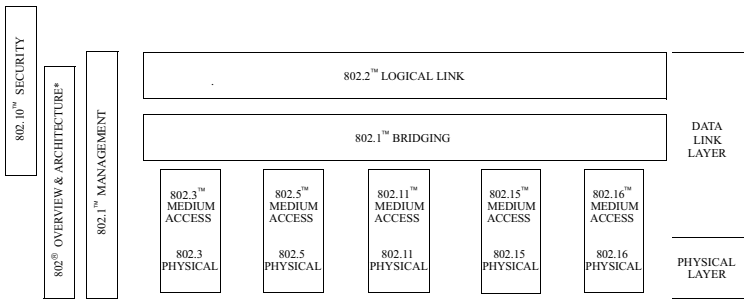
- A figure showing the family of IEEE 802 standards and their relationship to each other

- A list of current standards

Introduction

This introduction is not part of IEEE Std 802.11g-2003 (Amendment to IEEE Std 802.11, 1999 Edition, as amended by IEEE Stds 802.11a-1999, 802.11b-1999, 802.11b-1999/Cor 1-2001, and 802.11d-2001), IEEE Standard for Information Technology—Telecommunications and Information Exchange between Systems—Local and Metropolitan Area Networks—Specific Requirements—Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications—Amendment 4: Further Higher Data Rate Extension in the 2.4 GHz Band.

This amendment is part of a family of standards for local and metropolitan area networks. The relationship between the standard and other members of the family is shown below. (The numbers in the figure refer to IEEE standard designations.[1])



* Formerly IEEE Std 802.1A™.

This family of standards deals with the Physical and Data Link layers as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model (ISO/IEC 7498-1: 1994). The access standards define five types of medium access technologies and associated physical media, each appropriate for particular applications or system objectives. Some access standards have been withdrawn and other types are under investigation.

The standards defining the technologies noted above are as follows:

- IEEE Std 802:[2] *Overview and Architecture.* This standard provides an overview to the family of IEEE 802 Standards.
- IEEE Std 802.1B™ and 802.1k™ [ISO/IEC 15802-2] *LAN/MAN Management.* Defines an OSI management-compatible architecture and services and protocol elements for use in a LAN/MAN environment for performing remote management.
- IEEE Std 802.1D™ *Media Access Control (MAC) Bridges.* Specifies an architecture and protocol for the interconnection of IEEE 802 LANs below the MAC service boundary.

[1]The IEEE standard designations referred to in the above figure and list are trademarks owned by the Institute of Electrical and Electronics Engineers, Incorporated.

[2]The IEEE 802 Overview and Architecture Specification, originally known as IEEE Std 802.1A, has been renumbered as IEEE Std 802. This has been done to accommodate recognition of the base standard in a family of standards. References to IEEE Std 802.1A should be considered as references to IEEE Std 802.

Concerns

- Difficult to keep updated
  - More frequent changes in IEEE working group structure and approval of standards
    - Information outdated almost as soon as it is published
  - Differences in perception of what should be included by individual working group chairs
  - No central control of information and no central authority for changes
  - Leads to inconsistency and greater probability for error
- May be perceived as technical information

New Procedure Proposed

- Figure and list of standards will be deleted from the front matter
- Working group chairs may insert non-technical information that is specific to each standard
- Subclause describing format of conformance documents will be tailored to the working group
  - IEEE 802.3 will show IEEE 1802.3
  - IEEE 802.16 will show IEEE 802.16-200x/Conformance0x-200x

Questions?

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Paul expressed the thanks of the SEC to Karen Rupp, Yvette Ho Sang, Jennifer Longman and May Lynne Neilsen for their help and attendance at this week's meeting.

8.03	**II**	**IEEE-SA/ IEEE CS rules update**	**-**	**Sherman**	**5**	**04:05 PM**

5

CS SAB Issues - Status

- In reviewing CS SAB P&P became aware of “conflicts” with LMSC P&P
- Have inquiry with Jim Moore (VP CS SAB)
  - No response yet

CS SAB Issues

- When do LMSC P&P changes become effective?
  - CS SAB P&P seem to indicate they must first be balloted by CS SAB
    - See CS SAB P&P Sections 3.3 and 11.0
  - Would prefer P&P effective at end of Plenary when approved
- Which takes precedence – LMSC P&P or Roberts Rules?
  - CS SAB P&P places Robert's Rules are above Sponsor (LMSC) P&P (for instance 802's P&P)
    - See CS SAB P&P Section 2.0
  - Would prefer Robert's Rules placed below LMSC P&P
- Do we pass PARs to **par@computer.org**?
  - We should
    - See CS SAB P&P Section 6.3(d)

Long Term Rules Approach

- CS SAB is rewriting their P&P from scratch
  - Starting from model Sponsor P&P from SA
- Want to assist CS SAB in completing their job
  - Seems to be ongoing for a couple of years
- Want to redo our P&P along same lines once CS SAB completes their work
  - Will incorporate by reference as much as possible
    - Minimize number of local rules required

8.04	**II**	**EMS implementation update**	**-**	**Frazier**	**5**	**04:10 PM**

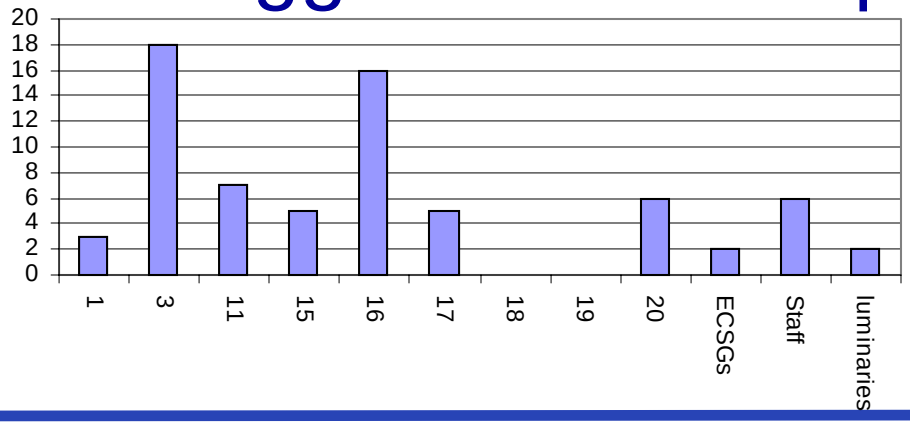
IEEE

EMS

Education, Mentoring, & Support
for the IEEE 802 LMSC
Update

Activities This Week - Education

- Initial training session held Monday night, 8:00 - 10:15 pm - 70 attendees
- SA PAR, balloting, and approval procedures
  - Jennifer Longman, Christine Santos, Howard Frazier
- Very positive feedback, including constructive suggestions for improvement



Activities This Week - Education

- SEC Chairman's meeting held Wednesday afternoon to discuss Education
  - Add web based training modules
  - Continue lecture series at every plenary
    - Monday evening, second tutorial slot
  - Add training on financial procedures and responsibilities
  - Considered proposals for assessment, matriculation, certification - will make recommendation in November
- Firm agreement that Education is essential
- Next lecture: IEEE Style manual & Framemaker

Activities This Week - Mentoring

- SEC Chairman's meeting held Wednesday afternoon to discuss Mentoring
  - LMSC chair to form a pool of mentors
  - Every project assigned a mentor upon formation of a Study Group
  - Mentors may decline one project assignment per calendar year
  - Mentors provide *advice and guidance on procedural matters*

Activities This Week - Support

- SEC Chairman's meeting held Wednesday afternoon to discuss Support
- Asked staff for SOW and cost estimate to provide additional services
  - Support for rules change process
  - Staff attendance at interim meetings
  - Additional training, including web modules
  - Maintenance of membership DBs
  - SEC web site admin
  - Ballot comment collection/distribution/tracking

9.00		**LMSC Liaisons & External Interface**	**-**			**04:15 PM**
9.01	**ME**	**Approval of Comments on FCC 5 GHz NPRM**	**-**	**Stevenson**	**2**	**04:15 PM**

Moved: To approve 18-03-0041-00-0000_802_Cmts_ET-03-122_r0.doc, authorizing the chair of 802.18 to do necessary editorial and formatting changes, and file the document in a timely fashion with the FCC.

Moved: Stevenson/Kerry

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band	)	ET Docket No. 03-122
	)	RM - 10371
	)	
	)	
	)	

Via the ECFS

COMMENTS OF IEEE 802

IEEE 802[1] hereby respectfully offers its Comments on the Notice of Proposed Rulemaking (the "NPRM") in the above-captioned Proceeding.[2]

The members of the IEEE 802 that participate in the IEEE 802 standards process are interested parties in this proceeding. IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks ("WLANs"), wireless personal area networks ("WPANs"), and wireless metropolitan area networks ("Wireless MANs").

IEEE 802 is an interested party in this Proceeding and we appreciate the opportunity to provide these comments to the Commission.

[1] The IEEE Local and Metropolitan Area Networks Standards Committee ("IEEE 802" or the "LMSC")

[2] This document represents the views of the IEEE 802. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.

INTRODUCTION

1. On January 15, 2002, the Wireless Ethernet Compatibility Alliance ("WECA"), now known as the Wi-Fi Alliance, filed a Petition for Rulemaking (the "WECA Petition") with the Commission, seeking the allocation of 255 MHz of spectrum from 5470-5725 MHz for use by Radio Local Area Networks ("RLANs"). WECA additionally recommended that the Commission adopt the same technical standards as are embodied in the Commission's rules for U-NII devices in the 5250-5350 MHz band.

2. The WECA Petition sought to achieve two major goals. First, the allocation of the aforementioned additional spectrum to meet the future needs of RLANs and, second, to achieve a global harmonization of spectrum allocated for use by RLANs in order to promote economies of scale that would result in lower costs for users of RLAN technology and to facilitate a regulatory regime that would allow the users of portable RLAN client devices to enjoy the significant benefits of freedom of roaming across borders in today's ever more global society and economy.

3. In Europe, the bands 5150-5350 MHz (already available for use by RLANs in the U.S. under the Commission's "U-NII" rules) and 5470-5725 MHz had already been allocated on a *PRIMARY* basis for use by high performance RLANs.[3] Additionally, the need for a globally-harmonized allocation "for wireless access systems, including RLANs" in these specific bands had been recognized by the ITU,[4] and was scheduled for consideration by the World Radiocommunications Conference in 2003 ("WRC-03").[5]

4. At WRC-03, without opposition by a single ITU Member State Administration, the conference adopted a Resolution ("Resolution COM5/16") and corresponding changes to the Table of Frequency Allocations, adding *PRIMARY* allocations to the Mobile Service in the bands 5150-5350 and 5470-5725 MHz, for wireless access systems, including RLANs, as described in ITU-R Recommendation M.1450.[6]

5. IEEE 802 commends the Commission for adopting the instant NPRM, proposing to make the band 5470-5725 MHz available for use by wireless access systems, including RLANs, in the U.S. We will comment in more detail on the Commission's proposals in the following sections of these Comments.

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[3] *See* ERC/DEC/(99)23

[4] *See* Resolution 736, WRC-2000

[5] *See* WRC-03, Agenda Item 1.5

[6] *See* Final Acts, WRC-03, Resolution COM5/16 and corresponding changes to Article 5 of the ITU Radio Regulations

IN THE NPRM, THE COMMISSION RECOGNIZES AND ACKNOWLEDGES THE NEED FOR THE ADDITIONAL SPECTRUM REQUESTED IN THE WECA PETITION

6. In the NPRM, the Commission states "*We agree with WECA that the spectrum currently available for U-NII devices is insufficient to support long-term growth for unlicensed wireless broadband devices and networks. Ample evidence exists of the enormous growth in the demand for such devices and services*."[7]

7. The Commission also states in the NRPM that *"... we tentatively conclude that an additional 255 megahertz should be made available under the U-NII rules to meet the growing demand for new high data rate devices and services and to enable equipment to use spectrum that is harmonized with the European HiperLAN standards.*"[8]

THE BODY OF COMMENT IN REPONSE TO THE WECA PETITION SUPPORTS BOTH THE NEED AND THE FEASIBILITY OF MAKING THE SUBJECT SPECTRUM AVAILABLE FOR USE BY WIRELESS ACCESS SYSTEMS, INCLUDING RLANS

8. In response to the WECA Petition, seventeen comments and ten reply comments were filed. The overwhelming majority of the commenters supported WECA's proposal, citing both the benefits of additional system capacity and the promise of new technologies capable of providing higher data rates than currently available.[9]

9. The primary opposition to the WECA Petition came from the American Radio Relay League ("ARRL"), supported by the Amherst Alliance and Mr. Nicholas Leggett, who collectively expressed concern that wireless access systems, including RLANs, operating in the band 5650-5725 MHz might cause interference to the Amateur Radio Service, which has a *Secondary* allocation in that band.

10. Other commenters, including Roeder[10] and IEEE 802[11] pointed out that amateur use of the band in question is negligible and, therefore, the potential for interference to amateur users is likewise negligible.

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[7] S*ee* the NPRM, at 11.

[8] *Id*., at 12.

[9] *Id*., at 5.

[10] *See* Konrad Roeder comments on the WECA Petition, at 1.

[11] See the Reply Comments of IEEE 802 in RM-10371, at 11, 16, 17, and 22.

11. The Commission's own observations also support the conclusion that amateur use of the band in question is extremely limited: "*Our review of ARRL's web site indicates that amateur use of this band is limited to propagation beacons and possibly some limited satellite use*." [12]

12. Furthermore, in the NPRM, the Commission states, "*We observe that amateurs already share the 5.725-5.825 GHz band with U-NII devices and we are unaware of any complaints of interference.*"[13]

13. IEEE 802 would hasten to point out that U-NII devices in the 5.725-5.825 GHz band are allowed to operate with much higher effective radiated powers[14] than the 1 Watt EIRP limit proposed in the instant NPRM.[15]

14. Thus, IEEE 802 would contend that the facts do not support the interference concerns expressed by ARRL et al.

15. We would also point out that, while the Amateur Radio Service has a *Secondary* allocation in the band 5650-5725 MHz, as stated above (at 4), WRC-03, *without opposition by a single ITU Member State Administration*, adopted Resolution COM5/16 and corresponding changes to the Table of Frequency Allocations, adding *PRIMARY* allocations to the Mobile Service in the bands 5150-5350 and 5470-5725 MHz, for wireless access systems, including RLANs, as described in ITU-R Recommendation M.1450.

16. In light of these facts, and a recurring, ongoing history of challenges to the Commission's fundamental authority to authorize Part 15 unlicensed uses by the ARRL, we have serious concerns about the impact on both manufacturers and the community of U.S. users of 5 GHz wireless access systems, including RLANs, that would result from maintaining the current "*less than Secondary*" status of these devices in the Commission's rules, noting that the global community (*with the full support, even encouragement, of the United States*) has recognized the importance of these devices to society and the global economy by making *PRIMARY* allocations specifically for them in the same frequency bands addressed by the instant NPRM.

17. We will address this issue in more detail in a later section of these Comments.

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[12] *See* the NPRM, at 19.

[13] *Id.*

[14] *See* 47 C.F.R § 15.407 (a)(3), which allows an omnidirectional EIRP of up to 4 Watts, and further allows fixed, point to point systems to operate at 1 Watt transmitter output power with directional antennas of up to 23 dBi gain, resulting in an allowable EIRP of up to 200 Watts.

[15] (and additionally imposed in the newly-revised ITU Radio Regulations as a result of the actions of WRC-03)

COMMENTS ON THE ADEQUACY OF SPECTRUM FOR HIGH POWERED USES

18. We note that the Commission states in the NPRM, "*We expect that the 100 MHz of spectrum that is already available at 5.725-5.825 GHz will remain sufficient for higher power operations. We note in particular that operations over longer distances employ directional antennas that allow for high reuse and sharing of the spectrum, which mitigates the need for additional spectrum for these types of operations. We seek comment on this analysis*."[16]

19. While we fully realize that the power limits for the 5150-5350 and 5470-5725 MHz bands have been set by recent changes to the ITU Radio Regulations, and furthermore that the subject of additional "high power" spectrum in the 5 GHz region is beyond the scope of the instant NPRM, we are not convinced that the Commission's expectation as stated above is necessarily correct.

20. The 5725-5825MHz U-NII "high-power" band is currently used by WLANs (IEEE 802.11a), point to point systems, point to multipoint WAN/local broadband wireless access systems (IEEE 802.16 and other systems), and numerous other Part 15 systems, including cordless phones. We therefore have a general concern that the Commission's expectation that the 100 MHz of the 5725-5825 MHz band will remain sufficient for higher power operations may not be realistic**,** particularly if the band is used by more than one public access or public service operator in the same geographic area.

COMMENTS ON DFS

21. In the NPRM, the Commission proposes to require the use of an interference mechanism known as Dynamic Frequency Selection ("DFS") to assure the protection of incumbent radar systems in the bands 5250-5350 and 5470-5725 MHz.[17]

22. IEEE 802 concurs with the requirement for DFS, noting that sharing studies done both in the ITU-R and between U.S. industry and NTIA/DoD have shown that DFS, with the thresholds and other parameters specified are, in fact, necessary to assure protection of critical government radar systems with which wireless access systems, including RLANs, will share the bands referenced above (at 18).

[16] *See* the NPRM, at 18.
[17] *Id.*, at 21-23.

23. We also note that WRC-03 adopted changes to the ITU Radio Regulations that require wireless access systems, including RLANs, to implement DFS within the global *PRIMARY* allocation to the Mobile service that is intended for use by such devices. Since the ITU Radio Regulations are a treaty obligation, we believe that the Commission must require the use of DFS in these bands according to Resolution COM5/16 (WRC-03) and the referenced ITU-R Recommendation on DFS characteristics.

24. Regarding DFS, the NPRM states, in part, "*The DFS mechanism* ***detects*** **[emphasis added]** *a radar signal above a minimum DFS detection threshold of –62 dBm for devices with a maximum e.i.r.p. less than 200 mW and –64 dBm for devices with a maximum e.i.r.p. between 200 mW and 1 W averaged over 1 μs. The DFS detection threshold is defined as the received signal strength (RSS) in dBm* ***(or some other metric of received signal format)*** **[emphasis added]**, *referenced to the output of a 0 dBi receive antenna.* ***These signal levels are referenced to a 1 MHz bandwidth.*** **[emphasis added]**"

25. Referring to the ITU-R DFS Recommendation,[18] which is incorporated by reference in Resolution COM5/16 (WRC-03), it can be seen that the requirement is, in part: *"The DFS mechanism should be able to detect interference signals above a minimum DFS detection threshold of –62 dBm for devices with a maximum e.i.r.p. of < 200 mW and –64 dBm for devices with a maximum e.i.r.p. of 200 mW to 1 W*[19] [footnote number changed for correct "flow" in this document] *averaged over 1 μs. This is defined as the received signal strength (RSS) (dBm), normalized to the output of a 0 dBi receive antenna, that is required to be detected within the WAS channel bandwidth."*

26. The mention of *"... some other metric of received signal format"* in the NPRM text (at 21) is, in our view, unclear and inconsistent with the requirements of the DFS Recommendation.

27. Additionally, the last sentence in 21 above, "*These signal levels are referenced to a 1 MHz bandwidth.*" appears to be a misinterpretation.

28. Finally the text of the first sentence uses "*detects*" instead of the "*should be able to detect*" wording of the DFS Recommendation.

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18 *See* ITU-R Recommendation M.1652, adopted at RA-03.

19 (footnote 4 from ITU-R Recommendation M.1652: "*In practice, it may not be necessary for each device to implement full DFS functionality, provided that such devices are only able to transmit under the control of a device that ensures that all DFS requirements are fulfilled.*")

29. In general, recognizing that the NPRM was drafted before the outcome of WRC-03 was known, we would respectfully recommend that the NPRM language be amended, where necessary, to assure complete conformance to the language of the DFS Recommendation and Resolution COM5/16 (WRC-03).

"… A U-NII DEVICE HAVING A RECEIVE BANDWIDTH LESS THAN 1 MHZ" SEEMS CONTRARY TO THE DEFINITION OF "U-NII DEVICES"

30. In the NPRM, the Commission states: "*However, if the RSS is to be measured correctly by* ***a U-NII device having a receive bandwidth less than 1 MHz*** **[emphasis added***/, a bandwidth correction factor must be taken into account. We seek comment on whether 10*Log (BW/1MHz) (where BW is the U-NII device's bandwidth) should be used as the appropriate correction factor for U-NII devices that have a bandwidth less than 1 MHz.*"[20]

31. The Commission's rules define "U-NII devices" as follows: "*U-NII devices. Intentional radiators operating in the frequency bands 5.15 - 5.35 GHz and 5.725 - 5.825 GHz that use wideband digital modulation techniques and provide a wide array of high data rate mobile and fixed communications for individuals, businesses, and institutions*."[21]

32. Based on the above-referenced definition of a "U-NII device," we believe that referring to a "*U-NII device having a receive bandwidth less than 1 MHz*" is inconsistent and confusing at best. In our view, a device with a receive bandwidth of less than 1 MHz is not employing "*wideband digital modulation techniques"* and would be inherently incapable of *"provide(ing) a wide array of high data rate mobile and fixed communications …"*

33. In light of the fact that the ITU Radio Regulations and Table of Allocations, as amended by WRC-03 clearly intend that the subject bands be used for wireless access systems, including RLANs,[22] and the acknowledged need[23] for this spectrum to accommodate future growth of such systems, we believe that the Commission should reject the concept of "narrowband U-NII devices."

34. For this reason, we respectfully suggest that the reference to such devices and bandwidth correction factors be deleted from the NPRM text and not be considered further.

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[20] *See* the NPRM, at 21.

[21] See 47 C.F.R § 15.403 (i)

[22] See Resolves 1, Resolution COM5/16 (WRC-03), which reads as follows: "that the use of these bands by the mobile service is for the implementation of WAS including RLANs as described in Recommendation ITU-R M.1450;"

[23] S*ee* the NPRM, at 11, Resolution 736 (WRC-2000), and Agenda Item 1.5 (WRC-03).

IN SYSTEMS WHERE MULTIPLE DEVICES OPERATE UNDER A CENTRAL CONTROLLER, ONLY THE CENTRAL CONTROLLER SHOULD BE REQUIRED TO IMPLEMENT THE RADAR DETECTION FUNCTION OF DFS

35. In the NPRM, the Commission states "*For systems, where multiple devices operate under a central controller, we propose that only the central controller be required to have DFS capability*."[24]

36. We concur fully with this proposal because in such an "infrastructure" network, the DFS functional requirement is that the "cell" consisting of a central controller (an "Access Point" or "AP" in RLAN terms) and some number of associated "client devices" avoid co-channel operation which would interfere with a radar system.

37. Since, in such a network, the client devices are "associated with," and may be controlled by, an AP that is capable of controlling the client devices' access to the media (the radio channel), it is only necessary that APs perform the radar detection function in order to assure that the system behaves appropriately in terms of avoiding co-channel interference to radar systems.

38. As long as the AP is able to perform the radar detection function and assert control over its associated client devices, the system requirement will be met.

39. Since there are typically a number of client devices associated with an AP in such systems, APs are better able to bear the additional cost involved in implementing the radar detection function.

40. Likewise, since there are multiple (often many) client devices associated with each AP, it is important to minimize the cost of client devices in order to lower the total system cost that users must bear.

41. Finally, since APs are generally connected to an AC power source, power consumption is much less of an issue than in client devices, which need to minimize their power consumption in order not to have an adverse effect on the battery life of the "host" device (e.g., a notebook computer, PDA, etc.) This factor also bodes in favor of centralizing the radar detection function in the AP or central controller.

[24] *See* the NPRM, at 22.

DFS IN SYTEM ARCHITECTURES THAT LACK A CENTRAL CONTROLLER

42. The NPRM also observes that "*We recognize that there may be devices or architectures developed, where remote devices are not under the control of a master device."* and seeks comment on whether such devices should be required to implement DFS.[25]

43. Current, and anticipated, usage patterns indicate that a vast majority of users of the type of devices in question operate using a central controller mode (AP/client mode), and it is the rare exception when devices operate in a mode where there is no central controller. Also given that devices operating without a central controller are virtually always portable devices with limited power capability and size limitations, it is our opinion that the aggregate amount of potential interference energy would be severely limited.

44. Again, we fully support the concept that in a centrally-controlled network architecture with an AP/central controller, only AP should be required to do radar detection.

45. We also note that this proposal is fully in conformance with the requirements of ITU-R Recommendation M.1652.

46. Vis a vis systems operating in a non-centrally-controlled mode, at least two options exist, neither of which is mutually exclusive:

- Limit EIRP to a sufficiently low level in all bands (10 mW???) that DFS would not as a practical matter be required, noting that utilization of this mode will be far less frequent, and of a much more transitory nature, than "infrastructure mode" where a DFS-capable central controller (AP) would be present, and further noting that this mode of operation is typically conducted between devices within very close range of each other, so lower power would be operationally acceptable.

- Limit this mode of operation to the 5150-5250 MHz band, where DFS is not required and additionally limit the allowable EIRP to a lower value than the general 200 mW regulatory limit for this band (10 mW???)

47. Under current Commission rules, this would technically preclude outdoor use of this mode of operation in the 5150-5250 MHz band and could result in a minimal amount of accidental outdoor use.

48. However, the effects of such accidental outdoor use by 1% of the total population in the footprint of an MSS satellite, at 200 mW EIRP, on the MSS feeder links were taken into account in ITU-R sharing studies which concluded in ITU-R Recommendations S.1426, S.1427, and M.1454.

[25] See the NPRM, at 22.

49. Since any aggregate interference to MSS feeder links that would result from accidental outdoor use would scale directly with EIRP, this lower (10 mW) EIRP limit would result in tolerable levels of aggregate interference into MSS feeder links, even if 20% of the population were to simultaneously operate outdoors in this mode of operation – an extremely unlikely event.

THE REQUEST FOR COMMENT ON "IDENTIFYING REMOTE UNITS THAT OPERATE ONLY UNDER THE CONTROL OF A CENTRAL CONTROLLER" IS UNCLEAR

50. The NPRM further invites comment on how to identify remote units that operate only under the control of a central controller.[26]

51. It is unclear to us for what purpose this identification is necessary. Is if for test/certification purposes, labelling purposes, or for some other reason?

52. From our perspective, devices will "know" their capabilities and will behave accordingly. If the Commission can provide clarification as to the purpose of this question, we would be happy to formulate a response.

COMMENTS ON RADAR DETECTION QUESTIONS

53. The NPRM seeks comment on the minimum number of pulses and the observation time required for reliable detection of radar signals by the DFS mechanism.[27]

54. It is unclear if this request relates to the Channel Availability Check mode of DFS, the In Service Monitoring mode, or both. Each has different characteristics, but the fundamental requirements for radar detection and other DFS performance parameters are specified in ITU-R Recommendation M.1652.

55. The minimum number of pulses required for reliable detection of radar signals by the DFS mechanism is likely to be implementation dependent and need not/should not be codified in the Commission's rules, in order to avoid constraining the future development of innovative approaches that may provide superior performance.

56. The required observation time is, in essence, related to the probability of detection and the amount of WAS/RLAN traffic on a channel (how many inter-packet gaps are inherently available for listening during the in service monitoring mode). These facts were taken into account in the ITU-R and industry/U.S. government sharing studies that resulted in the development of ITU-R Recommendation M.1652.

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[26] See the NPRM, at 22.

[27] *See* the NPRM, at 23.

57. Furthermore, we believe that these issues may substantially relate to test procedures for equipment certification and we will comment further on that subject in a separate section later in these Comments.

TRANSMIT POWER CONTROL

58. In the NPRM, the Commission proposes to require Transmit Power Control ("TPC") in the band 5470-5725 MHz.[28]

59. We support this proposal, noting that this requirement is also embodied in the ITU Radio Regulations modifications enacted by WRC-03, and further note that the newly modified ITU Radio Regulations also require the use of TPC in the 5250-5350 MHz band.[29]

60. The text of the NPRM states that "*TPC will allow the transmitter to operate at less than the maximum power for most of the time*."[30]

61. However, we believe that it would be more accurate and appropriate to state that "*TPC will allow the transmitter to operate at less than the maximum power in many situations*."

62. The reason for this distinction is that the ability to reduce power via TPC, while maintaining reasonable performance, is not a time factor, but rather a location/propagation/cell size factor. Over a large population of devices it is highly probable, statistically, that the goal of an overall average power reduction of 3 dB, to provide additional mitigation of interference potential to the EESS and SRS will be achieved, and that is the primary purpose of TPC.

63. The text of the NPRM further states that "*Because TPC equipped devices adjust their transmit power to the minimum necessary to achieve the desired performance, the average interference power from a large number of devices is reduced, the power consumption is minimized and network capacity is increased*."[31]

64. This text appears to us to present some issues with respect to serving as the basis for specific rules/requirements for two reasons:

- First, "desired performance" is lacks definition;
- Second, it must be remembered that the primary goal of the TPC requirement is to achieve, on average, over the total population of devices, a 3 dB mitigation of the potential for interference to the EESS and SRS.

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[28] *Id.*, at 24.

[29] See Resolution COM5/16 (WRC-03)

[30] *See* the NPRM, at 24.

[31] *Id.*

65. Thus, the phrase "… *adjust their transmit power to the minimum necessary to achieve the desired performance* …" could easily be misconstrued into a requirement that would actually result in significant, unnecessary system performance degradations.

66. The reason for this is rooted in the way that most systems of the type intended to be deployed in this band actually work.

67. Because of the Carrier Sense Multiple Access Collision Avoidance ("CSMA/CA") protocol that is employed, it is highly undesirable to have situations when the client devices associated with an AP cannot "hear" each other.

68. The reason for this is that, before transmitting (between each packet transmitted in the system), each device monitors the RF channel to determine if it is occupied or not. If the channel is occupied, other devices will defer for a random amount of time (within certain limits), monitor the channel again, and if the channel is still occupied, defer again for another random interval. This cycle is repeated until the channel is sensed as unoccupied by the device that has randomly selected the shortest deferral period. At that time, that device will begin transmission of its packet, causing other devices to sense the channel as occupied.

69. Thus, if a particular device is located such that its propagation loss to the AP is much less than that of the other devices associated with the AP, it could, in theory, reduce its power much more than the other devices and still maintain acceptable communications with the AP.

70. However, if the device's transmit power is reduced too much, the other devices will be unable to detect the fact that it is transmitting to the AP (they will be unable to correctly determine whether the channel is occupied or not), resulting in some other device(s) sensing the channel as unoccupied when, in fact, it is occupied.

71. In such cases, the other device will transmit (if it also has data to transmit at the time), resulting in a packet collision, corrupting the packets from both devices and necessitating the retransmission of both devices' packets.

72. This situation undesirably degrades network performance (throughput and latency) and, in systems that are heavily loaded, can result in a "cascade" of collisions and retransmissions that can dramatically reduce throughput and increase latency for all users, and as a result, decreasing the efficiency of spectrum utilization.

73. This bodes against a requirement that devices always be required to reduce their power more than is necessary to achieve the required 3 dB mitigation of the potential for interference to the EESS and SRS, on average, over the total population of devices.

74. When one considers the large numbers of devices of this type to be deployed, it is easy to see that the required 3 dB mitigation, on average, of the potential for interference to the EESS and SRS will be achieved by requiring that devices be capable of reducing their EIRP by 6 dB.

75. Even if all devices were designed to transmit at the regulatory maximum EIRP at their highest power setting, the variable physical distribution of devices and propagation distributions in real world, practical network installations will inherently result in many devices being able to reduce their EIRP by 6 dB and a more modest number of devices needing to transmit at their highest available EIRP.

76. Since the majority of devices in most networks are battery powered, portable client devices, system designers have every incentive to design their networks with "cell" sizes that result in those devices being able to transmit at their lower EIRP setting, at most locations, most of the time, in order to maximize the battery life of the "host" device (e.g., notebook computer, PDA, etc.)

77. In fact, this incentive to maximize the battery life of the host device is so strong that the vast majority of devices will have a maximum EIRP capability well below the regulatory limit, which will provide additional margin to assure that the 3 dB mitigation requirement is easily met over the entire population of devices.

78. Thus, we believe that the Commission's proposal to require devices to employ a TPC mechanism that will ensure a 6 dB drop in power (from maximum) when triggered to be entirely adequate and appropriate.

THE "TRIGGERING MECHANISM" FOR TPC WILL BE IMPLMENTATION DEPENDENT AND SHOULD NOT BE CODIFIED IN THE COMMISSION'S RULES

79. Historically, the Commission has, laudably, gone to considerable lengths to make sure that its rules do not unduly constrain the development of new technologies and techniques. This issue as a perfect example of a situation where that philosophy can, and should, be applied.

80. To specify a particular "trigger mechanism" for TPC, e.g., Received Signal Strength Indication ("RSSI"), for example, is an unnecessary requirement that will constrain receiver architectures unnecessarily.

81. While some manufacturers may decide to use RSSI, others may find that, due to their development of different receiver architectures, packet error rate monitoring or some other technique of determining when it is possible for a device to reduce its EIRP to be more practical or advantageous in terms of implementation cost, power consumption, or other factors.

82. Thus, we recommend that the Commission strive to specify *behavior*, rather than implementation details, because the behavior is what is required and manufacturers should be free to produce innovative solutions to achieve that required behavior.

83. This approach will spur competition to produce innovative technologies that reduce costs, power consumption, etc. – all to the benefit of the users of such devices.

BECAUSE OF THE NATURE OF THE TPC REQUIREMENT, TIMING IS NOT A CRITICAL ISSUE AND TPC TIMING SHOULD NOT BE "OVER SPECIFIED"

84. Since, as discussed above, the primary goal of TPC is a 3 dB mitigation of the potential for interference to the EESS and SRS, on average, over the total population of devices, the TPC function need not have a particularly fast response time requirement.

85. Over the entire population of devices, many will be relatively stationary (e.g., a person sitting at a desk, or at a table in a conference room during a meeting) and thus their propagation environment will not be rapidly changing over extreme ranges, with only a fraction of devices operating in a more dynamic propagation environment.

86. Because of the statistical nature of TPC's required net result in real world environments, over a very large population of devices, we believe that a regulatory requirement for a TPC activation time of something on the order of 30 seconds would be entirely adequate and would not impose an unnecessary burden on device manufacturers.

87. Having said that, we also believe that the strong incentives to reduce device power consumption will inherently drive manufacturers to implement TPC activation times that are, in fact, faster than this proposed regulatory requirement. Never the less, we believe that any regulatory requirement should not be "over specified" because that could limit design choices, unnecessarily increase device costs, or produce other unintended negative consequences.

DEVICES THAT OPERATE 3 dB OR MORE BELOW THE REGULATORY EIRP LIMIT NEED NOT BE REQUIRED TO IMPLEMENT TPC

88. Devices that have a maximum EIRP capability that is 3 dB or more should not be required to implement TPC at all because they inherently will "contribute their 3 dB of interference mitigation" to the total interference power seen by the EESS and SRS.

89. To impose a TPC requirement on such devices could unnecessarily increase the cost and power consumption of low power devices that, by definition, meet the required goal of TPC.

90. Therefore, we believe that the Commission need not, and should not, require that such devices necessarily implement TPC functionality.

91. Manufacturers may choose to implement TPC in such devices, due to considerations such as design commonality with higher powered devices, the desire to reduce device power consumption, or other technical or economic motivations, but they should not be required to do so for the reasons outlined above.

GENERAL COMMENTS ON TEST PROCEDURES

92. In the NPRM, the Commission states: "*We seek comment on appropriate test procedures needed to ensure compliance with the DFS and TPC requirements proposed in this proceeding. We note that the operational requirements for DFS are well defined in the applicable industry standards*."[32]

93. We would also observe that specific DFS operational requirements are contained in ITU-R Resolution M.1652.

94. The Commission also seeks comment on TPC test requirements: "*We observe that while TPC has been agreed to as a general requirement, its operational details are still under development. Therefore, we particularly seek comment on the means by which devices can be tested for compliance with TPC requirements to implement reduced power without placing unnecessary restrictions on device design*."[33]

95. Generally, we believe that a demonstration of the ability of a device that is required to implement TPC to reduce its output power under software/firmware control by at least 6 dB should be adequate.

96. As discussed above, the TPC requirement is not, fundamentally, extremely critical on a single device basis, but rather on a statistical basis over the total population of devices that are required to implement TPC. (Noting that devices that operate with EIRPs of at least 3 dB below the regulatory limit should not be required to implement TPC, though some may.)

MEASUREMENT TECHNIQUES ARE ADEQUATE FOR PRESENT-DAY DEVICES

97. The Commission also seeks comment "…*on the extent to which devices under development that may have unique or novel transmission waveforms may require special measurement instrumentation settings (e.g., integration times) that differ from those used for measuring compliance for existing U-NII band devices*."[34]

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[32] See the NPRM, at 25.

[33] *See* the NPRM, at 25.

[34] *Id.*

98. Current WAS/RLAN equipment, at least according to the IEEE 802 family of standards, was designed to comply with currently specified measurement techniques. Should future standards development projects contemplate transmission waveforms that might require the use of different measurement techniques, we will consult with the Commission's Office of Engineering and Technology for guidance.

SPECIFIC COMMENTS AND RECOMMENDATIONS ON TEST PROCEDURES

99. A joint industry/U.S. government 5 GHz Project Team has been established, under the auspices of NTIA to address the testing issues involved in DFS and TPC in order to assure that adequate test procedures are developed to provide the required protection of incumbent users of the subject bands, including critical U.S. government radar systems.

100. We are aware that there will be significant industry participation in this activity, and we assume that appropriate Commission staff members will also participate.

101. The intent and goal of this group is to cooperatively develop test methodologies and plans that will satisfy the needs of both industry and government users of the subject bands, with the expectation that the Commission will adopt the resulting test methodologies and plans.

102. Because the bands in question were allocated regionally on a *PRIMARY* basis in Europe by the ERC (99)23 Decision several years ago, *and that decision imposed both DFS and TPC requirements*, a significant body of work on radio conformance testing has already been done under the auspices of ETSI, with participation by both industry members and regulators.

103. This work, embodied in ETSI EN 301 893 V1.2.2 (2003-06), which is, in our opinion quite complete and mature (the version listed is expected to be approved as of August 1, 2003 and published by August 15, 2003), will be input to the 5 GHz Project Team as a baseline starting point, with the expectation that this will speed the process and, hopefully, result in common testing requirements between the U.S. and European administrations.

104. Therefore, we strongly recommend that detailed issues relating to test procedures be addressed in that venue and input to the FCC's public comment process when completed.

COMMENTS ON TRANSITION PERIODS

105. In the NPRM, the Commission proposes transition periods for both the 5250-5350 and 5470-5725 MHz bands to allow a reasonable opportunity for manufacturers to complete design, implementation, and certification of new equipment that will comply with the requirements for DFS and TPC functionality.[35]

106. Since the band 5470-5725 MHz is a "new" spectrum for wireless access systems, including RLANs, in the U.S., the proposal that the rules therefore would take effect on the effective date of the new rules seems entirely reasonable and appropriate.

107. However, the transition periods proposed for the 5250-5350 MHz band, where equipment is currently authorized and shipping under the current rules, which do not require DFS or TPC functionality, raise some potentially serious issues.

108. Specifically, the proposal that *" ... the DFS requirement for the 5.250-5.350 GHz band [become?] effective for U-NII equipment that is certified after one year from the date of publication of the Report and Order in this proceeding in the Federal Register*."[36] may present an insurmountable hurdle for manufacturers, due to the fact that we believe that the full implementation of detailed test procedures may potentially lag behind the Report and Order.

109. If this scenario were to come to pass, the instant proposal would result in a period where manufacturers would be unable to obtain new equipment certifications.

110. Therefore, we would recommend a transition period keyed to the availability of Commission-approved test procedures, rather than the publication of the Report and Order in the Federal Register.

111. Likewise, the proposal for a two year period, during which manufacturers would be permitted to ship previously certified products,[37] should, in our opinion, also be keyed to the availability of Commission-approved test procedures, rather than the publication of the Report and Order in the Federal Register.

112. While the proposed two year period allows an additional year for shipping previously certified products, compared to the one year period after which new certifications would require compliance with the new rules, that two years may not be fully available due the lag in certification of new products, as alluded to above (at 108).

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35 *See* the NPRM, at 26.

36 *See* the NPRM, at 26.

37 *Id*.

113. Finally, we note the statement "*We believe that most affected products will be redesigned within this three-year time frame and that compliance with this proposal would not cause an unreasonable burden on industry*." in the NPRM,[38] and find it confusing, in that we don't understand what is meant by a "three-year time frame." We would request that the Commission clarify this issue.

114. Therefore, we respectfully request that the Commission carefully consider the timing of transition periods for both new equipment certifications and sales of previously certified equipment in light of these concerns.

FREQUENCY ALLOCATION/LICENSING BY RULE VS. OPERATION UNDER PART 15 WITH "LESS THAN SECONDARY" REGULATORY STATUS

115. As mentioned earlier in these Comments, IEEE 802 has serious concerns about the future impact on both industry and users of maintaining wireless access systems, including RLANs, in a "*less than Secondary*" regulatory status, rather than making an actual frequency allocation for such devices in the 5150-5350 and 5470-5725 MHz bands and treating such systems as "Licensed by Rule." (Clearly, for these types of devices, individual licensing is totally impractical.)

116. Wireless access systems, including RLANs – particularly those built in compliance with the relevant members of the IEEE 802 family of standards – have become exceptionally important to society and the U.S. economy – to the point that we believe that they deserve the same level of regulatory status domestically as they will enjoy in other parts of the world as a result of the adoption of a global, PRIMARY allocation to the Mobile service in the 5150-5350 and 5470-5725 MHz bands, "*for the for the implementation of WAS including RLANs as described in Recommendation ITU-R M.1450*."[39]

117. Such systems are currently, and will increasingly be, in daily use in mission-critical applications in enterprise networks throughout business, industry, healthcare systems, educational institutions, public safety, and homeland security, as well as in the fast-growing home network sector of the market.

118. The fact of the matter is that these systems are the only means available to the user community that can deliver the combination of mobility and high data rates that their uses require.

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[38] *Id.*

[39] See Resolves 1, Resolution COM5.16 (WRC-03)

119. While RLAN sales alone are projected to reach $5-6 billion dollars by the year 2005 or 2006 (depending on which analyst's data you have the most confidence in), the economic benefits to society through increased productivity, mobility, and the low cost of installation of such systems simply dwarfs the revenue that the industry generates through the sale of the equipment itself.

120. Clearly, under the ITU Radio Regulations, as modified by WRC-03 to make the allocation, and any reasonable FCC rules that would be adopted, wireless access systems, including RLANs, are obligated to protect, and may not claim protection from interference from incumbent users such as critical government radars. Industry has never disputed this reality.

121. However, we believe that it is an *entirely* different matter to leave such an important economic driver, *and the services it provides to literally millions of users in the U.S.*, vulnerable to interference from, and recurrent challenges to its fundamental right to operate, because of alleged interference to, a *Secondary* service such as the Amateur Radio Service, particularly in light of the preponderance of evidence before the Commission that amateur use of the shared band is vanishing small.

122. We are also perplexed by inconsistency of the Commission's proposal to keep these devices in "less than Secondary" regulatory status with respect to the United States' international policy, in light of the fact that the United States' position at WRC-03 was one of aggressively active support for the adoption of a global, PRIMARY allocation in the ITU Radio Regulations for these devices.

123. Therefore, we respectfully request that the Commission thoughtfully and seriously reconsider this aspect of its proposal in this Proceeding and make a PRIMARY allocation to the Mobile service in the domestic table of frequency allocations - dedicated for use by wireless access systems, including RLANs - in conformity with the position that the United States advocated to the global community at WRC-03.

Respectfully submitted,

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Passes: 12/0/0

9.02	**ME**	**Approval of Reply Comments to FCC on Additional 2.4 GHz Unlicensed Spectrum**	**-**	**Stevenson**	**2**	**04:17 PM**

Moved: : To approve 18-03-0042-00-0000_Rep_Cmts_IB-01-185_IB-02-364_Addtl_2.4GHz_Spectrum_r0.doc, authorizing the chair of 802.18 to do necessary editorial and formatting changes, and file the document in a timely fashion with the FCC.
Moved: Stevenson/Kerry

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Flexibility for Delivery of Communications by	)	IB Docket No. 01-185
Mobile Satellite Service Providers in the 2 GHz	)	
Band, the L-Band, and the 1.6/2.4 GHz Bands;	)	IB Docket No. 02-364
Review of the Spectrum Sharing Plan Among		
Non-Geostationary Satellite Orbit Mobile Satellite		
Service Systems in the 1.6/2.4 GHz Bands		

To: The Commission

Via the ECFS

REPLY COMMENTS OF IEEE 802

IEEE 802[1] hereby respectfully offers its Reply Comments in the above-captioned Proceeding.[2]

The members of the IEEE 802 that participate in the IEEE 802 standards process are interested parties in this proceeding. IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks ("WLANs"), wireless personal area networks ("WPANs"), and wireless metropolitan area networks ("Wireless MANs").

As an interested party in this Proceeding we appreciate the opportunity to provide these Reply Comments to the Commission.

[1] The IEEE Local and Metropolitan Area Networks Standards Committee ("IEEE 802" or the "LMSC")

[2] This document represents the views of IEEE 802. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.

EXTENDING THE 2.4 GHZ "PART 15" BAND BY ADDING THE SEGMENTS 2483.5 TO 2492.5 MHZ AND 2498 TO 2500 MHZ IS THE BEST USE OF THE RECLAIMED BIG LEO SPECTRUM

1. In reviewing the comments filed regarding the Big Leo NPRM, IEEE 802 believes that the arguments for reassignment to license-exempt use under Part 15 offered in comments by the License-Exempt Alliance ("LEA") present a compelling economic case for reallocation to a service profile with a clear track record of success. The LEA states:

> *"From a consumer perspective, then, there is more than ample justification for the Commission to support license-exempt wireless broadband deployment via an allocation of additional license-exempt spectrum in the 2483.5-2492.5 MHz and 2498-2500 MHz bands."*

2. Given the dismal economic performance of the bankrupt Big Leo licensees, and the speculative economics of other proposed reallocations, such as those proposed by Verizon regarding MDS, IEEE 802 supports the extension of license exempt spectrum at 2.4 GHz as clearly the most economically viable allocation. The track record of economic growth supported by license exempt services, especially by IEEE 802 based networks, is unparalleled in recent wireless communications history. The opportunities for deployment in new areas, metropolitan and rural, and continued growth only improve with the added spectrum segments.

3. We support the arguments and conclusions of Verizon Wireless[3] that any actual or necessary relocation of existing systems from the MDS band can and should be accommodated within the (restructured) 2500 – 2690 MHz MMDS / ITFS bands. We do NOT support Verizon's alternative conclusion that MDS relocation should occur to the proposed 2490-2500 MHz band. We assert, instead, that the public interest would be better served by extending the license exempt band, based on the economic success of IEEE 802 WLAN standards based equipment operating in the 2400-2483.5 MHz band.

4. We concur with the Comment of the Wireless Communications Association International (WCA)[4] that:

> *"…the Commission must extend newly-adopted Section 25.255 of the Rules to ensure that no terrestrial service provider in the 2483.5-2500 MHz band causes harmful interference to adjacent MDS/ITFS operations at 2500-2690 MHz."*

3 *See* Reply Comments of Verizon Wireless, dated July 7, 2003

4 *See* Reply Comments of the WCA, dated July 7, 2003

5. We recognize the vital importance of coexistence between licensed exempt services and other services and continue to undertake within our own working groups and support the efforts of others to prevent interference. We believe that adding the two reclaimed Big Leo spectrum segments to the 2.4 GHz licensed exempt band will not result in interference to adjacent services, including MDS/ITFS operations, under present Commission rules.

6. We agree with the statement of the American Petroleum Institute/United Telecom Council (API/UTC) that:

> *"Unlicensed Wireless Ethernet Radio equipment (both point- to-point and point-to-multipoint) has been a cost-effective tool to get IP-type connectivity pushed out to many remote locations."*

7. However, we find their assertion that "*Experience has shown … that the potential for interference with unlicensed devices is substantial…*" to be exaggerated and without substance given the clear record of successful deployment of unlicensed network infrastructure in the mission critical operations of corporations, hospitals, and other venues where reliable operation is a priority. In addition, we point out that licensed radio bands are available under other parts of the Commission's rules to support any special needs of API/UTC members without a new spectrum allocation, including any "critical infrastructure" requirements.

Respectfully submitted,

/s/
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/s/
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Passes: 13/0/0

9.03	**II**	**Liaison contribution from 802.1 to ITU Q12/15**	**-**	**Jeffree**	**2**	**04:19 PM**

Source:	IEEE 802.1
Title:	***Response to Progress on Ethernet related recommendations***

COMMUNICATION STATEMENT

To:	ITU-T Q12/15
Approval:	July 2003 meeting, San Francisco
For:	
Deadline:	

Contact: Tony Jeffree, 802.1 Chair Email: mailto:tony@jeffree.co.uk

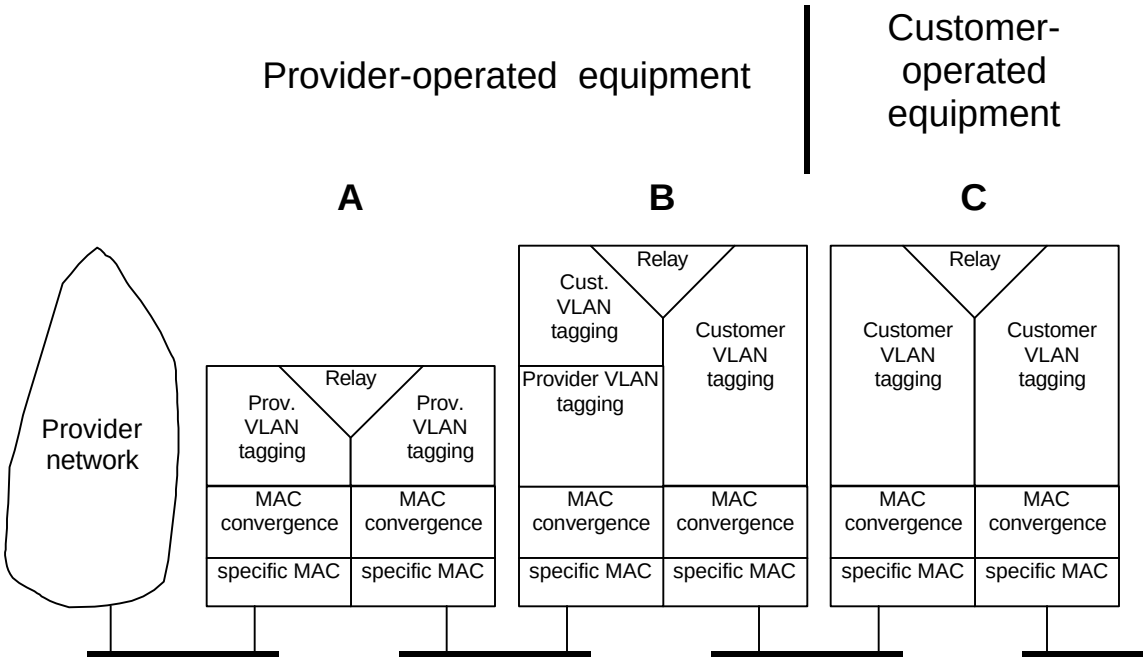
Response

At our July 2003 meeting, the ITU Q12/15 liaison to IEEE 802.1 was considered in both IEEE 802.1 and IEEE 802.3. IEEE 802.1 has read and approves the response to this liaison from IEEE 802.3, and offers these additional comments.

IEEE 802.1 has a single model for internetworking at Layer 2. The basic version of this model is the **bridge**, as described in IEEE Std. 802.1D-1998™, and amended by IEEE Std. 802.1t-2001 and IEEE Std. 802.1w-2001. This model was extended to include Virtual LANs (VLANs) by IEEE Std. 802.1Q-1998, which has been amended by IEEE Std. 802.1u-2001, IEEE Std. 802.1v-2001, and IEEE Std. 802.1s-2002. All of these documents are available electronically (at no charge) from the IEEE website.

The 802.1D bridge and 802.1Q VLAN-aware bridge are the only two store-and-forward devices defined by IEEE 802. Together with the specific media standards, e.g. IEEE 802.3 or IEEE 802.11, they define the Layer 2 services which characterize IEEE 802 networks. The ubiquitous deployment of IEEE 802 networks has created a huge base of higher layer protocols and applications which depend on precisely those Layer 2 services defined by IEEE 802. One could devise a model for forwarding IEEE 802 frames which differs from that of IEEE 802.1D and IEEE 802.1Q. Any other model, however, will necessarily offer a Layer 2 service which differs from the IEEE 802 service, and those differences will fail to meet the expectations of at least some existing higher layer protocols or applications.

It is this requirement to meet existing expectations for the Layer 2 service that drives the current project for Provider Bridges, IEEE P802.1ad. To comment upon the list of Layer 2 protocols in Table 6-1 of G.ethsrv WD05r4, this architecture must be illustrated.



In this diagram, devices A and B together may be called a "Provider Edge Bridge", and is (are) operated by the Provider. Function A may be repeated any number of times to form the Provider network. Device C is a Customer bridge, in this case an IEEE 802.1Q bridge.

In the diagram we can see that, since IEEE 802.3ad Link Aggregation, IEEE 802.3x PAUSE, and IEEE 802.3ah OAM functions are part of a particular MAC specification, namely IEEE 802.3, they cannot be carried end-to-end through any bridge, nor through the Provider's network.

Protocols specified by IEEE 802.1 are defined for the control layers residing above the MAC. The data forwarding domains associated with these protocols define the region of the network over which they can operate. IEEE P802.1ad will likely define new sets of multicast MAC addresses such that the Customers' STP, MSTP, RSTP, and GARP protocols (GVRP and GMRP), and possibly others in the future, can be carried end-to-end across the Provider's network.

The ability of IEEE 802.1X Port Authentication to be transported across the Provider's network has not yet been determined. This will be a work item for upcoming IEEE 802.1 Link Security project(s).

Finally, we may also see from the architectural diagram that there is a difference in the treatment of MAC addresses and VLAN tags:

1. Customer VLAN tags are carried end to end over the Provider network inside Provider VLAN tags, because the Customer-level VLAN tagging functions peer with each other, above the level of the Provider VLAN tagging functions.
2. There is no hierarchy for MAC addresses; Customer and Provider equipment MAC functions are all peers.
3. The Relay functions in the Customer and Provider bridges operate on different VLAN tags, but the same MAC addresses.

We trust that these comments will assist you in your current and future work. Further, IEEE 802.1 believes that it is in our interest to ensure that the work of ITU-T Q12/15 that incorporates the use of IEEE 802.1 compliant bridges is in fact compliant with our standards and consistent with our current work on provider bridges. For your information we have attached draft 1.1 of our IEEE P802.1ad specification. Please note that this is still work in progress.

To facilitate better understanding of what appears to be differing architectures, we invite ITU-T experts to attend the upcoming IEEE 802.1 interim meeting in Sacramento, Sept 22- 26. If the timing of this is too soon, we would suggest a co-located interim meeting after our November 2003 plenary in early 2004. During either or both of these meetings, some joint sessions could be scheduled to discuss topics of mutual interest.

9.04	**ME**	**802.11n press release**	**-**	**Kerry**		**04:21 PM**

Moved: Issue a press release based on information in 11-030556 and approve transmission to IEEE-SA marketing staff
Moved: Kerry/Heile
Passes: 12/0/0

9.05			**-**			**04:21 PM**
9.06			**-**			**04:21 PM**
9.07			**-**			**04:21 PM**
9.08			**-**			**04:21 PM**
9.09			**-**			**04:21 PM**
9.10			**-**			**04:21 PM**
10.00		**LMSC Internal Business**	**-**			**04:21 PM**
10.01	**MI**	**Approval of Unpaid Attendees P&P change**	**-**	**Quackenbush**	**5**	**04:21 PM**

Moved: That the proposed LMSC P&P change on unpaid attendees which has now completed LMSC eballot and comment resolution be adopted.
Moved: Quackenbush/Rigsbee
Passes: 11/0/0

10.02	**MI**	**Approval of WG Membership P&P change**	**-**	**Sherman**	**5**	**04:26 PM**

Moved: to approve incorporation of the P&P revision titled "WG membership" into the LMSC P&P.
Moved: Sherman/Jeffree

Several comments were made regarding the changes that would seem to disenfranchise SG members. There also seem to be several improper changes that result with at least one significant problem in 3.2.

Roger was directed by his working group, by unanimous vote, to vote against this change.

Fails: 3/9/1

10.03	**MI**	**Approval of Appeals Process P&P change**	**-**	**Sherman**	**5**	**04:31 PM**

Moved: To approve incorporation of the P&P revision titled "Appeals Process" into the LMSC P&P as modified (r4).
Moved: Sherman/Marks
Passes: 12/0/0

10.04	**MI**	**Approval of EC Name Change P&P change**	**-**	**Sherman**	**5**	**04:36 PM**

Moved: To approve incorporation of the P&P revision titled "EC Title Change" into the LMSC P&P.
Moved: Sherman/Marks
Passes: 11/0/0

10.05	**MI**	**Send Order of Precedence P&P change to ballot**	**-**	**Sherman**	**5**	**04:41 PM**

Moved: To approve balloting of the P&P revision titled "Precedence"
Moved: Sherman/Stevenson
Passes: 11/0/0

10.06	**MI**	**Send Treasury-related P&P change to ballot**	**-**	**Quackenbush**	**5**	**04:46 PM**

Moved: that the proposed LMSC P&P change dealing with WG financial operations be approved for distribution and EC eballot.
Moved: Quackenbush/Rigsbee
Passes: 12/0/0

10.07 MI Approval of equipment expenses - Quackenbush 5 04:51 PM

Moved: that 802 is authorized to acquire the following equipment for a total expense not to exceed $4,500.
AC power strips (100)
Dell laptop for on site web registration
Wireless APs (<10 Linksys WAP51ab)
Large equipment shipping case (1)
Moved: Quackenbush/Rigsbee
Passes: 11/0/0

10.08 MI Approved expenditure for production of 802 standard CD-ROM - Quackenbush 5 04:56 PM

Moved: that 802 is authorized to generate the 2004 edition of the 802 Standards CD-ROM for a total expense not to exceed $2000.
Moved: Quackenbush/O'Hara
Passes: 11/0/1

10.09 MI Approval of meeting planner expenses and extension of contract - Quackenbush 5 05:01 PM

Moved: that 802 Is authorized to contract with Face to Face Events to provide meeting planning and management service for the November 2003 802 plenary session under term to be negotiated and fees no greater than 15% more than the fees paid for the July 2003 session.
Moved: Quackenbush/Rigsbee
Passes: 12/0/0

10.10 MI Approval of memo on investigation of WG financial operations - Quackenbush 10 05:06 PM

Moved: that the report from the LMSC treasurer on the WG financial operations dated July 22, 2003 be accepted by the LMSC EC and that the corrective actions recommended in the report be adopted by the EC and required of 802.11, 802.15, and 802.17
Moved: Quackenbush/Rigsbee
Passes: 10/0/0

10.11 MI Increase budget for Networking at plenary sessions - Quackenbush 5 05:16 PM

Moved: that the budget for networking for a plenary session be increased to $35,000.
Moved: Quackenbush/Rigsbee
Passes: 10/1/0

10.12 MI Confirm LMSC contract with IDEAL - Quackenbush 5 05:21 PM

Moved: that the agreement with I.D.E.A.L. Technologies for network management services be confirmed.
Moved: Quackenbush/Rigsbee

A question was asked as to whether we received competitive bids. Bill responded that we had not. But, that the costs were determined to be reasonable.

Passes: 9/2/1

10.13 MI Review companion interim contract - Heile 5 05:26 PM

Moved: that the agreement with I.D.E.A.L Technologies for network management services for the 802.11/15 be confirmed
Moved: Heile/Stevenson

A point was made that there may have been insufficient time to review this contract. A counterpoint was made that it is identical to the LMSC version of the contract.

Passes: 10/1/0

10.14			**-**			**05:26 PM**
10.15			**-**			**05:26 PM**
10.16			**-**			**05:26 PM**
11.00		**Information Items**	**-**			**05:26 PM**
11.01	**II**	**announcement of appointment of Gary Robinson to Chair 802.20 WG**	**-**	**Nikolich**	**2**	**05:26 PM**

Paul announced that he has appointed Gary Robinson as the chair of the 802.20 working group.

11.02	**II**	**802.20 WG status update**	**-**	**Robinson**	**5**	**05:28 PM**

IEEE 802.20 Session # 3
Executive Committee Report

Mark Klerer, Jerry Upton
Vice-Chairs

25 July 2004

Decision to not hold election

- Monday July 21 P. Nikolich and G. Thompson led a discussion on the nominations and elections procedures to be followed in 802.20.
- Based on an interpretation of the LMSC Operating Rules it was agreed that the Working Group had to pass a motion by 75% to have elections at a particular plenary.
- The motion to have elections failed.

E-mail Correspondence Groups

- The three correspondence groups (Requirements, Channel & Traffic Models and Evaluation Criteria) presented the results of their work.
- The correspondence groups will continue their work and this work will be reviewed at the Interim Meeting.
- Defined operating procedures for the e-mail correspondence groups to assure uniform operations across the four CGs.
- A new e-mail correspondence group was established to develop a consensus recommendation to the Working Group on how to address issues related to the coexistence of future 802.20 systems with other wireless technologies deployed in the licensed bands below 3.5GHz.

Composite Conference Call Calendar

(Post-meeting Slide)

- August 2003
  - Aug 5, Tuesday 2:00-3:00 PM Channel Modeling
  - Aug 6, Wednesday 12:00-2 PM Evaluation Criteria
  - Aug 7, Thursday 12-1:30 PM Traffic Modeling
  - Aug 15, Friday 1:00-2:00 PM Coexistence
  - Aug 27, Wednesday 12-1:30 PM Traffic Modeling
  - Sep 3, Wednesday 12:00-2 PM Evaluation Criteria
  - Sep 8, Monday 1:00-2:00 PM Coexistence

  - All times are EDT. Conference calls may be cancelled if they are not needed. Rescheduling of calls is possible with a minimum of 5 business days advance notice – but is strongly discouraged
  - Call-in information and call agenda to be available 5 business days prior to the call

A point was made that the ability to change the conference calls with only 5 business days notice does not meet the LMSC P&P requirement for advance notice for meetings.

11.03	**II**	**802.3ak presubmit to December RevCom**	**-**	**Grow**	**2**	**05:33 PM**

Bob Grow announced the intention of 802.3 to presubmit 802.3ak to the December RevCom agenda, assuming a successful conclusion to the sponsor recirculation ballot.

11.04	**II**	**802.3 actions this week**	**-**	**Grow**	**5**	**05:35 PM**

EFM 802.3ah is going to WG ballot (finally), 802.3 operating rules changed attendance credits, issued 3 interpretation

11.05	**II**	**802 Handoff ECSG Report**	**-**	**Johnston**	**5**	**05:40 PM**

Done in agenda

11.06	**II**	**Interim meetings**	**-**	**Nikolich**	**2**	**05:45 PM**

802.1: Sacramento week of 22-26 September
802.3ak conditional meeting in San Jose area (additional as needed for ballot cycles
802.3ah and 10G-Base-T Porto Nova Italy 15-19 Sept
802.11, 15, 18, 19, 20 Sept 15-19 Singapore
802.16/ECSG Sept 8-11 Denver
802.17 aug 26-28 San Jose, Sept 23-25 Las Vegas

11.07	**II**	**802 News Bulletin**	**-**	**Klerer**	**10**	**05:47 PM**

Final inputs due 7/30

11.08	**II**	**802.1 formation of Link Sec task group**	**-**	**Jeffree**	**2**	**05:57 PM**

802.1 has voted to convert the link sec SG to a TG of 802.1 with Dolors Sala as chair.

11.09	**II**	**Future Meetings**	**-**	**Rigsbee**	**5**	**05:59 PM**

March 2005:
Atlanta Hyatt Regency
DFW Hyatt Regency
Miami Hyatt Regency
Boston Park Plaza
Orlando Caribe Royale

Moved: to select the HR Atlanta
Moved: Quackenbush/Stevenson
Passes: 12/0/0

November 2005:
HR + Fairmont Vancouver
HR DFW
Orlando Caribe Royale

Moved: to select HR Vancouver
Moved: Quackenbush/Takefman
Passes: 12/0/0

November 2007
HR Atlanta offered the same deal as 2005 if we book this now.

Moved: to select HR Atlanta
Moved: Quackenbush/Rigsbee
Passes: 11/0/0

Moved: keep only the March 5-10 2006 Boston Park Plaza from the list presented.
Moved: Thompson/Stevenson
Passes: 11/1/0

July 2006:
Ottawa CC and 4 hotels
London Metropole

11.10	**II**	**Process to review Attendance software**	**-**	**Heile**	**5**	**05:59 PM**

This is not distributed to the entire EC yet. Bob will circulate the material and seek feedback and dialog.

11.11	**II**	**802.18 Status**	**-**	**Stevenson**	**5**	**05:59 PM**

802.18 RR-TAG Closing Report

- Report on July Plenary Meeting
- Objectives for September Interim Meeting

Report on March 2003 Plenary Meeting

- **Prepared and approved 2 regulatory documents**
  - 18-03-0041-00-0000_802_Cmts_ET-03-122_r0.doc
  - 18-03-0042-00-0000_Rep_Cmts_IB-01-185_IB-02-364_Addtl_2.4GHz_Spectrum_r0.doc
- **Approved 802.18 RR-TAG P&P (TAG Rules)**
- **Adopted resolution on working with WFA Regulatory Committee on joint request for clarification from FCC on 802.11d issues**

Planned Objectives for September Interim

- Prepare regulatory documents as time permits (will prioritize at 802.18 opening plenary)
- Hold joint meetings with other groups, if requested

11.12	**II**	**802.19 Status**	**-**	**Lansford**	**5**	**05:59 PM**

Get file from Jim

ADJOURN SEC MEETING **-** **Nikolich** **06:00 PM**

Motion to adjourn.
Moved: Thompson/Jeffree
Passes: 12/0/0

The LMSC meeting was adjourned at 6:02pm.

Respectfully Submitted,
Bob O'Hara
Recording Secretary