

**Minutes**  
**Control Protocols Working Group**

Monday 30 January 1012  
DFW Marriott Solana

**Chairpersons:** Kimberly Corbett; Schuler Shook; P; DE  
Michael Lay; Philips Color Kinetics (Royal Philips Electronics); P; MP

**Recording secretary:** Karl G. Ruling; PLASA

**Members attending:**

Reza Khanmalek; Spectrum Manufacturing Inc. (A.C. Lighting Ltd.); A; CP  
Jean-Francois Canuel; Spectrum Manufacturing Inc.(A.C. Lighting Ltd.); P; CP  
Kevin Loewen; Pathway Connectivity Inc. (Acuity Brands Inc.); P; MP  
Simon Hobday; Artistic Licence Engineering Ltd. (Alderamin Group); O; DE  
Eric Johnson; High End Systems (Barco); P; MP  
Paul Kleissler; City Theatrical, Inc.; P; MP  
Peter Kirkup; Zero 88 (Cooper Controls Ltd.); P; MP  
Edward A. (Ted) Paget; Daktronics Automated Rigging Solutions (Daktronics Inc.); P; G  
Larry Schoeneman; DesignLab Chicago, Inc.; O; DR  
Milton Davis; Doug Fleenor Design, Inc.; A; MP  
Sean Sill; Doug Fleenor Design, Inc.; A; MP  
Daniel W. Antonuk; Electronic Theatre Controls, Inc.; P; MP  
Maya Nigrosh; Electronic Theatre Controls, Inc.; A; MP  
Insu Kim; Electronics and Telecommunications Research Institute; O; MP  
Sang-Kyu Lim; Electronics and Telecommunications Research Institute; O; MP  
Scott M. Blair; Full Throttle Films/ VER; P; DR  
Robert Goddard; Goddard Design Co.; P; MP  
Ed Garstkiewicz; Harting Inc., North America (Harting KGAA); P; G  
Peter Willis; Howard Eaton Lighting Ltd.; P; CP  
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U  
Roger Lattin; I.A.T.S.E. Local 728; P; U  
Ken Vannice; Leviton Manufacturing Co., Inc.; P; MP  
Tyrone Mellon\_Jr.; Lex Products Corp.; P; CP  
Ron Bonner; PLASA Technical Resources Office (PLASA EU); P; G  
Charles Reese; Production Resource Group; P; DR  
Simon Newton; I; G  
Mitch Hefter; representing USITT; P; U  
Christopher Tilton; Westlake Reed Leskosky; P; DE

**Visitors:** None

**1 Opening remarks**

Kimberly Corbett called the meeting to order at 9:00. She welcomed all to the meeting.

**2 Attendance**

**2.1 Introductions of those present and circulation of attendance sheet**

Those present introduced themselves while a blue sign-in sheet was circulated.

## 2.2 Determination of a quorum

Corbett asked for each voting member to raise a hand. She counted the up-raised hands, and then announced that a quorum was present.

## 2.3 Recognition of alternate voting members

Alternates were recognized. Voters were reminded that only one representative may vote on a question. That is, one vote per company or association.

## 3 Membership

### 3.1 Requirements for membership

The following statement was read aloud to the assembly:

Membership is open to all who are affected by the work of the group. People and companies that would be in any interest category other than a manufacturer interest category are at this time particularly encouraged to apply for membership. Voting members are required to attend meetings and to vote on letter ballots. Voting members and their alternates may not miss three consecutive meetings without a loss of voting status.

### 3.2 Changes to observer status due to lack of attendance

Voting members who have missed the previous two meetings and will be moved to observer status if this meeting also is missed:

None.

### 3.3 Processing of new membership requests and reaffirmation of members with new companies

The following applications had been received and logged:

Chris Tilton, Westlake Reed Leskosky, P, DE  
Yongshun Duan; Macostar International Ltd.; O; CP  
C. S. Wong; Macostar International Ltd.; O; CP  
Garrett Gallant; Acuity Brands Inc.; A; MP  
Reza Khanmalek; Spectrum Manufacturing, Inc. (AC Lighting); A; CP

Mitch Hefter asked that his employing company be removed from his record, but that he still be listed as representing USITT, as he always has been listed. .

Ted Paget moved that the applications and the change to the record be accepted. The motion was seconded. The motion was approved with a show of hands.

### 3.4 Consensus body

The full consensus body during this meeting, including those not present, was:

Name	Representing	Voting status	Int. cat.
Jean-Francois Canuel	A.C. Lighting Ltd.	P	CP
Reza Khanmalek	A.C. Lighting Ltd.	A	CP
Kevin Loewen	Acuity Brands Inc.	P	MP
Robert Bell	Acuity Brands Inc.	A	MP
Gary Douglas	Acuity Brands Inc.	A	MP
Alan Martello	Acuity Brands Inc.	A	MP
Philip Nye	Acuity Brands Inc.	A	MP
Garrett Gallant	Acuity Brands Inc.	A	MP

Name	Representing	Voting status	Int. cat.
Eric Johnson	Barco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Larry Dunn	City Theatrical, Inc.	A	MP
Peter Kirkup	Cooper Controls Ltd.	P	MP
Edward A. (Ted) Paget	Daktronics Inc.	P	G
Ulrich Kunkel	DIN, NVBF Committee	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	A	MP
Sean Sill	Doug Fleenor Design, Inc.	A	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	A	MP
Scott M. Blair	Full Throttle Films/ VER	P	DR
Robert Goddard	Goddard Design Co.	P	MP
Ed Garstkiewicz	Harting KGAA	P	G
Howard Forryan	Harting KGAA	A	G
Peter Willis	Howard Eaton Lighting Ltd.	P	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	A	U
Roger Lattin	I.A.T.S.E. Local 728	P	U
Dennis Grow	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Ken Vannice	Leviton Manufacturing Co., Inc.	P	MP
Tyrone Mellon_Jr.	Lex Products Corp.	P	CP
Michael Karlsson	LumenRadio AB	P	MP
Marcus Bengtsson	LumenRadio AB	A	MP
Hans Lau	LumenRadio AB	A	MP
Ron Bonner	PLASA EU	P	G
Charles Reese	Production Resource Group	P	DR
Michael Lay	Royal Philips Electronics	P	MP
Kimberly Corbett	Schuler Shook	P	DE
Simon Newton	Simon Newton	I	G
Mitch Hefter	USITT	P	U
Christopher Tilton	Westlake Reed Leskosky	P	DE

Name	Representing	Voting status	Int. cat.
Daniel Darrington	Wireless Solutions Sweden AB	P	MP
	<b>Total votes possible</b>	<b>26</b>	
	Votes by interest categories	3	CP
		11	MP
		2	DR
		4	U
		4	G
		2	DE

#### 4 Approval of the minutes from the October 2011 meeting

See *CPmin10-2011.pdf*.

Scott Blair moved that the draft minutes be accepted as written. The motion was seconded and then approved with a show of hands.

#### 5 Reading of the call for patents

Michael Lay read the following statement aloud to the assembly:

"PLASA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. PLASA uses a process of open patent and copyright disclosures to implement its intent. PLASA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent or copyright or other intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence."

Nothing was reported.

#### 6 Reading of the anti-trust statement

Michael Lay read the following statement aloud to the assembly:

"The PLASA Board of Directors, the Technical Standards Committee, and the leadership of this working group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chairs immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or PLASA chair immediately.

"PLASA legal counsel has informed us that violations of the anti-trust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$1,000,000 and imprisoned for up to ten years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

Karl Ruling, the Technical Standards Manager, held up some of the easy-to-read pamphlets to show that they were available at the meeting. No restraint of trade issues were reported.

#### 7 Approval of agenda

Kimberly Corbett asked for changes to the agenda. Two were offered:

- △ Under Other Business add a report on a new RDM website

- △ Address the VLC item at the end of Old Business

Ted Paget moved that the modified agenda be accepted. The motion was seconded and then approved with a show of hands.

## 8 Old business

### 8.1 Standards Maintenance. Any news or action needed on any of these standards?

*This is a placeholder in the agenda, so we don't forget to maintain them.*

**ANSI E1.3 – 2001 (R2011)**, Entertainment Technology - Lighting Control Systems - 0 to 10V Analog Control Specification & Application Guide For ANSI E1.3 – 2004 Lighting Control Systems 0 to 10V Analog Control Specifications. Revision, reaffirmation or withdrawal in 2016.

Karl Ruling said that someone had sent him an email suggesting that the standard should offer advice on architectural control wiring practices, both for this standard and for the 0 to 10 V current sink control (IEC 60929) used with architectural dimming ballasts. There was no follow-up, however, when Ruling sent the correspondent a project request form.

There was a discussion of possible articles for Protocol on analog control wiring, perhaps written by Bob Goddard or Mitch Hefter.

**ANSI E1.11 – 2008**, Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. Revision, reaffirmation, or withdrawal in 2013.

No action at this time.

**ANSI E1.17 - 2010**, Architecture for Control Networks. Revision, reaffirmation or withdrawal in 2016.

No action at this time.

**ANSI E1.20 - 2010**, Remote Device Management over USITT DMX512. Revision, reaffirmation or withdrawal in 2016.

No action at this time.

**ANSI E1.27-1 – 2006 (R2011)**, Entertainment Technology - Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products. Revision, reaffirmation or withdrawal in 2016.

No action at this time.

**ANSI E1.27-2 – 2009**, Entertainment Technology - Recommended Practice for Permanently Installed Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products. Revision, reaffirmation, or withdrawal in 2014.

No action at this time.

**ANSI E1.30-1 - 2010**, EPI 23, Device Identification Subdevice. Revision, reaffirmation or withdrawal in 2016.

No action at this time.

**ANSI E1.30-3 – 2009**, EPI 25, Time Reference in ACN Systems Using SNTP and NTP. Revision, reaffirmation, or withdrawal in 2014.

No action at this time.

**ANSI E1.30-4 – 2010**, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. Revision, reaffirmation, or withdrawal in 2015.  
No action at this time.

**ANSI E1.30-7 – 2009**, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts. Revision, reaffirmation, or withdrawal in 2014.  
No action at this time.

**ANSI E1.30-10 – 2009**, EPI 32, Identification of Draft Device Description Language Modules. Revision, reaffirmation, or withdrawal in 2014.  
No action at this time.

**ANSI E1.31 – 2009**, Entertainment Technology – Lightweight streaming protocol for transport of DMX512 using ACN. Revision, reaffirmation or withdrawal in 2014.  
No action at this time.

## **8.2 BSR E1.37-1, Additional Message Sets for ANSI E1.20, Remote Device Management**

*Update on final approval as ANS. It was approved on Friday the 13<sup>th</sup>.*

Karl Ruling reported that it was on his to-do list to be published.

## **8.3 BSR E1.30-12, EPI 34, E1.31 Universe Synchronization**

*Progress report from the Task Group. At the Oct 2011 session, Ulrich Kunkel reported he would have progress for the January meeting.*

Karl Ruling read Ulrich Kunkel's email to the assembly:

From: Ulrich Kunkel <ulrich.kunkel@e3-engineering.eu>  
Sent: Monday, 30 January 2012 08:02  
To: karl.ruling@plasa.org  
Cc: 'Kimberly Corbett'; 'Lay, Michael'  
Subject: PLASA CPWG meeting & BSR E1.30-12, EPI 34, E1.31

Dear Karl

As I am caught in the commissioning of a larger Theatre system (using ACN!), which was delayed by several month now, I couldn't make to the winter session at Westlake this time.

For this reason I will also miss the chance to talk about "EPI 34 - E1.31 Universe Synchronization" in depth where is was expecting to hold a task group meeting about during the last few days.

My plan is to form a proper draft document and circulate it the task group within the next weeks to gain some feedback so we will be able to come up with a document to be presented to the CPWG group prior to the meeting at USITT in March.

From the CPWG meeting at LDI '11 I have noted the following members for the task group, can you please double check these: [list of members and email addresses]

All the best from a cold and freezing Germany – I wish you a successful meeting  
Ulrich

#### **8.4 BSR E1.33, Extensions to E1.31 for Transport of ANSI E1.20 (RDM)**

*Progress report from the Task Group. Task group is working on comment resolution.*

Scott Blair reported that they are making progress. There will be significant changes in response to the public review comments, including changes to the structure of the protocol. The task group plans to meet at USITT, if it can be scheduled. Blair said he was optimistic for it being ready to consider for a second review in July.

There was a discussion of name. E1.33 is not dependent on E1.31, so it is not a set of extensions to E1.31 to support RDM. Ruling suggested the title "Transport of ANSI E1.20 (RDM) in an ANSI E1.31-type Network Environment," or something similar. This keeps E1.31 in the title, so complaints about changing the affected stakeholders is not likely.

#### **8.5 BSR E1.37-2, Additional Message Sets for ANSI E1.20, PID Extensions**

*LED wall and video monitoring and device control. Discussion of new project initiation and task group creation.*

Simon Newton spoke and explained that the -2 project is not about LED wall and video monitoring, but is about IPv4 & DNS configuration messages. LED wall and video monitoring and device control will be in another part of E1.37.

Roger Lattin moved that the draft E1.37-2 (CP/2012-1001) be offered for public review. There was discussion. The motion was accepted with a show of hands, with 18 voting Yes, three voting to abstain, and no opposition. The two chairpersons did not vote.

#### **8.6 CPWG marketing efforts**

##### **8.6.1 Protocol Articles**

*Simon Newton had suggested possible articles for 2012. Any other suggestions or volunteers?*

Possible analog control articles were discussed as part of the report on E1.3.

##### **8.6.2 PLASA/CPWG "Template" PowerPoint Project**

Michael Lay reported that Karl Ruling has the PowerPoint on file. He told people to ask Ruling for it, if they want to use it. It's a fairly generic description of the TSP with a focus on the CPWG's standards and projects.

##### **8.6.3 January Plugfest**

Eric Johnson reported that, despite the expectation that interest in the Plugfest would taper off, it is continuing to grow. This weekend's Plugfest brought new participants and new gear. It's a great deal: three days of free engineering consultation.

Scott Blair said that there are now links to the RDM-related *Protocol* journal articles on the <http://www.rdmprotocol.org/> website, and also a link to the *Protocol* journal subscription request page.

##### **8.6.4 European Plugfest**

Ron Bonner asked Peter Willis to report. Willis explained the scheduling concerns. Normally we have Plugfests in January and July, but a Plugfest near London in July 2012 would be complicated by the Olympics being held there at the same time. Therefore the European Plugfest is being tentatively scheduled for April 26, 27, and 28 near the Gatwick airport. The format will be to start Thursday at lunch time with presentations of what we've done, what we've learned, and how the testing proceeds. Then the real testing would be Friday and Saturday. The rental companies will attend Thursday to see what's up and then leave on Friday.

Richard Cadena said that Jen Barratt wants to do a Plugfest at the PLASA trade show. Ron Bonner said that is already being done at the Connectivity Pavilion. It's not as intense as the multi-day, all-day Plugfests, but it's a Plugfest.

### **8.6.5 Connectivity Pavilions**

The desirability of having a lead retrieval machine for the LDI Connectivity Pavilion was discussed. Michael Lay will see if Bill Ellis will organize the Pavilion for 2012.

Peter Willis asked if we should show the video used for the 2011 LDI Pavilion at the PLASA Focus in Austin, TX. Richard Cadena nodded "Yes." Eric Johnson volunteered to help Richard Cadena. Ted Paget also volunteered. The new PowerPoint (item 8.6.2) was also mentioned as a useful video for PLASA Focus.

### **8.7 Visible Light Communication control protocol proposal**

*Progress report, project consideration. See*

- *VLC\_ProjectRequest.pdf*
- *PLASA\_802\_ProjectScope2.pdf*, and
- *ETRI\_Insu\_Kim\_An\_idea\_for\_IEEE802\_data\_frames\_over\_DM512\_A\_transmission.pdf*.

Ted Paget moved that we accept the proposal for developing a standard to transport 802 data over DMX512A. The motion was seconded. There was discussion of unidirectional versus bidirectional communication. The motion was approved with a show of hands, with 20 voting Yes, one voting No, and two abstentions.

A task group was appointed: Mitch Hefter, Eric Johnson, Bob Goddard, Kevin Loewen, Philip Nye, Maya Nigrosh, Peter Willis, Sang-Kyu Lim, and Insu Kim.

## **9 Upcoming Meetings**

### **9.1 USITT**

The next meeting is scheduled for Thursday, March 29 from 9:00 – 13:00 at the Westin Hotel in Long Beach, California (not New Jersey, New York, or Washington), in conjunction with the USITT Conference and Stage Expo.

Kimberly Corbett asked for a show of hands of those planning to attend. The show of hands indicated that we should have a quorum.

### **9.2 July at NATEAC**

Michael Lay announced that the following meeting would be Saturday, July 21, timed to fit with the North American Theatre Engineering and Architecture Conference.

Kimberly Corbett said that John Huntington can offer us space for a Plugfest at New York City College of Technology (CUNY) There was a discussion of having a Plugfest there.

Eddie Kramer moved that we accept the proposal from John Huntington. The motion was seconded. There was discussion. The motion was never voted on, but the discussion indicated a consensus, not for doing a Plugfest, but for offering a connectivity pavilion addressing the Broadway and New York film & television community, as well as CUNY Entertainment Technology students.

## **10 New business**

None.

## **11 Other business and announcements**



### **11.1 IEEE Update**

No report.

### **11.2 RDM website**

Simon Newton announced the OpenLighting RDM website at <http://rdm.openlighting.org/>. It offers a listing of proprietary PIDs, and also products that use RDM.

### **11.3 Copper Hollywood tour**

Roger Lattin offered a tour of Hollywood studio lighting and power facilities. He asked for people interested to contact him. He will need to schedule this tour; it can't be done on a drop-in basis.

## **12 Adjournment**

Scott Blair moved that the meeting adjourn. The motion was seconded. The motion was approved with a show of hands. Kimberly Corbett declared the meeting adjourned at 11:22.

**Membership and Contact Information as of 16 February 2012**

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Charles Alicea	Philips- Professional Luminaires	Royal Philips Electronics	O	MP
Simon Alpert	Lighttech Event Technologies	Lighttech Event Technologies	O	CP
Klaus Amling	Licht-Technik	Licht-Technik	O	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Shahid Anwar	Avolites Ltd.	Avolites Ltd.	O	MP
Avraham Mendall Mor "Avi"	Lightswitch	Lightswitch	O	U
Daniel Ayers	Norcostco (Sales-Midwest)	Norcostco	O	DR
Timothy Baarsch	Artistic Licence Engineering Ltd.	Alderamin Group	O	DE
Tim Bachman	A.C.T Lighting, Inc.	A.C.T Lighting, Inc.	O	DR
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Robert Bell	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Marcus Bengtsson	LumenRadio AB	LumenRadio AB	A	MP
William Benner	Pangolin Laser Systems	Pangolin Laser Systems	O	MP
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	MP
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Stephen Bickford	T. Kondos Associates	T. Kondos Associates	O	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Scott M. Blair	Full Throttle Films/ VER	Full Throttle Films/ VER	P	DR
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
Ron Bonner	PLASA Technical Resources Office	PLASA EU	P	G
André Broucke	André Broucke	André Broucke	O	G
Larry Busch	ADB Lighting Technologies	ADB Lighting Technologies	O	MP
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	P	CP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP
Nyasha Chigwamba	Dept. of Computer Science	Rhodes University	O	U
Soo-Myong Chung	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Paul J. Clark	HxDx	HxDx	O	CP
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	G
Kimberly Corbett	Schuler Shook	Schuler Shook	P	DE
Eric Cornwell	West Side Systems	West Side Systems	O	U
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	O	U
Klas Dalbjorn	Labgruppen AB	TC Group	O	MP
Daniel Darrington	Wireless Solutions Sweden AB	Wireless Solutions Sweden AB	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Gilray Densham	CAST Software	CAST Group Inc	O	MP
Gary Douglas	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Yongshun Duan	Macostar Physics Application Technology Development (Wuhan) Ltd.	Macostar International Ltd.	O	CP
Hamish Dumbreck	JESE Ltd.	James Embedded Systems Engineering	O	MP
Larry Dunn	City Theatrical, Inc.	City Theatrical, Inc.	A	MP
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
James Eade	PLASA	PLASA	O	G
Andrew Eales	Wellington Institute of Technology	Rhodes University	O	U
Joost van Eenbergen	ELC Lighting	ELC Lighting	O	MP
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Paul K. Ericson	Syska Hennessy Group Lighting Design	Syska Hennessy Group Lighting Design	O	U
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Howard Forryan	Harting Ltd.	Harting KGAA	A	G
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
Garrett Gallant	Pathway Connectivity Inc.	Acuity Brands Inc.	A	MP
Phillip M. Gallo	TMB	TMB	O	DR
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Tom Grimes	High End Systems, Inc.	Barco	O	MP
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Josh Gubler	Josh Gubler	Josh Gubler	O	CP
Rob Halliday	Rob Halliday	Rob Halliday	O	U
Sean Harding	High Output, Inc.	High Output, Inc.	O	G
Mitch Hefter	Mitch Hefter	USITT	P	U
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Simon Hobday	Artistic Licence Engineering Ltd.	Alderamin Group	O	DE
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Jim Holladay	Luxence	Luxence	O	G
Wayne David Howell	Artistic Licence Engineering Ltd.	Alderamin Group	O	DE
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Osedum P. Igumbor	Dept. of Computer Science	Rhodes University	O	U
John Sondericker_III	Wybron, Inc.	Wybron, Inc.	O	MP
Sierk Janszen	Kiss Box	Ground Zero	O	U

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Eric Johnson	High End Systems	Barco	P	MP
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	O	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	P	CP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Tae Gyu Kang	ETRI	Electronics and Telecommunications Research Institute	O	MP
Ujjal Kar	Standard Robotics & Lighting	Standard Robotics & Lighting	O	G
Michael Karlsson	LumenRadio AB	LumenRadio AB	P	MP
Kirk D. Keen	Hollywood Lighting Services, Inc.	Hollywood Lighting, Inc.	O	DR
Reza Khanmalek	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	A	CP
Insu Kim	ETRI	Electronics and Telecommunications Research Institute	O	MP
Peter Kirkup	Zero 88	Cooper Controls Ltd.	P	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Phil Klapwyk	IATSE Local 891	IATSE Local 891	O	U
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	DIN, NVBF Committee	P	U
Jason Kyle	JPK Systems Ltd.	JPK Systems Ltd.	O	MP
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Hans Lau	LumenRadio AB	LumenRadio AB	A	MP
Michael Lay	Philips Color Kinetics	Royal Philips Electronics	P	MP
Rick Leinen	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	O	MP

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Hans Leiter	ETC GmbH	Electronic Theatre Controls, Inc.	O	MP
Jon Lenard	Applied Electronics	Applied Electronics	O	MP
Maarten Lepelaars	eldoLED	eldoLED	O	MP
Sang-Kyu Lim	ETRI	Electronics and Telecommunications Research Institute	O	MP
Kevin Loewen	Pathway Connectivity Inc.	Acuity Brands Inc.	P	MP
Mark Manthei	Shure Inc.	Shure Inc.	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Alan Martello	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Paul Kenneth McEwan	Zero 88	Cooper Controls Ltd.	O	MP
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Tobin Neis	Barbizon Companies	Barbizon Companies	O	DR
Simon Newton	Simon Newton	Simon Newton	I	G
Maya Nigrosh	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Philip Nye	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Lars F. Paape	Scientific Algorithms and Embedded Systems	Scientific Algorithms and Embedded Systems	O	U
Edward A. (Ted) Paget	Daktronics Automated Rigging Solutions	Daktronics Inc.	P	G
Fabiano Pina	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Eric Proces	Eric Proces	Eric Proces	O	U
Torben Kaas Rasmussen	Martin Professional A/S	Martin Professional A/S	O	G
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	MP

<b>Name</b>	<b>Company</b>	<b>Representing</b>	<b>Voting status</b>	<b>Int. cat.</b>
Steve Roberts	Carr & Angier	Carr & Angier	O	G
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	G
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	MP
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	O	MP
Larry Schoeneman	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	O	DR
Chuck Seifried	Phoenix Civic Plaza	City of Phoenix	O	U
John Sellers	AIM Northwest	AIM Northwest	O	G
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Yehuda Shukram	Compulite Systems	Compulite Systems	O	MP
Sean Sill	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Storm K. Staley	Stormwerx	Stormwerx	O	U
Ralph Stillinger	Strand Lighting	Royal Philips Electronics	O	MP
Bart Swinnen	Luminex LCE	Luminex LCE	O	MP
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	U
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
Christopher Tilton	Westlake Reed Leskosky	Westlake Reed Leskosky	P	DE
David Timmins	Jands Electronics	Jands Electronics	O	MP
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP
Bob Toms	Catalyst Microsystems LLC	Catalyst Microsystems LLC	O	G
Robert Tooker	Robert Tooker	Robert Tooker	O	U
Tad Trylski	Tad Trylski	Tad Trylski	O	U
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP

Name	Company	Representing	Voting status	Int. cat.
Tracy Underhill	4U Consulting	4U Consulting	O	G
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Oliver Waits	Avolites Ltd.	Avolites Ltd.	O	MP
John Warwick	Philips/Color Kinetics	Royal Philips Electronics	O	MP
Colin Waters	TMB	TMB	O	DR
Ralph Weber	ENDL Texas	ENDL Texas	O	G
Lars Wernlund	Lewlight	Lewlight	O	MP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
C. S. Wong	Macostar International Ltd.	Macostar International Ltd.	O	CP
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Kehang Wu	Shure Inc.	Shure Inc.	O	G
David Yellin	LightMinded Industries, Inc.	LightMinded Industries, Inc.	O	MP
Larry Zoll	Zoll Design & Consulting, LLC	Zoll Design & Consulting, LLC	O	U

**Key to codes:**

P principal voting member  
A alternate voting member  
I individual voting member  
O observer, non-voting member

MP mass-market producer  
CP custom-market producer  
DR dealer or rental company  
U user  
G general interest  
DE designer (specifies the products in designs)



