

**Minutes**  
**Control Protocols Working Group**  
Thursday, 27 March 2014  
Fort Worth Convention Center  
Ft. Worth, TX

**Presiding Co-Chairpersons:**

Kimberly Corbett Oates; Schuler Shook; P; DE  
Michael Lay; Philips Color Kinetics; Royal Philips; P; MP

**Recording Secretaries:**

Karl G. Ruling; PLASA NA; exf; G & Erin Grabe; PLASA NA; exf; G

**Members attending:**

Scott M. Blair; Full Throttle Films/ VER; P; DR  
Casey Diers; Designlab Chicago; A; DR  
Doug Fleenor; Doug Fleenor Design, Inc.; P; MP  
Mitch Heffer; USITT; P; U  
John Huntington; City Tech, Ent Tech Department; I.A.T.S.E. Local 1; A; U  
Tyrone Mellon\_Jr.; Lex Products Corp.; P; CP  
Hyun Jong Kim; ETRI; Electronics and Telecommunications Research Institute; A; G  
Paul Kleissler; City Theatrical, Inc.; P; MP  
Roger Lattin; I.A.T.S.E. Local 728; P; U  
Sang-Kyu Lim; ETRI; Electronics and Telecommunications Research Institute; P; G  
Kevin Loewen; Pathway Connectivity Inc.; Acuity Brands Inc.; P; MP  
John Musarra; O; U  
Maya Nigrosh; Electronic Theatre Controls, Inc.; A; MP  
Edward A. (Ted) Paget; Daktronics Automated Rigging Solutions; Daktronics Inc. ; P; G  
Larry Schoeneman; DesignLab Chicago, Inc.; P; DR  
Christopher Tilton; Westlake Reed Leskosky; O; DE  
Ken Vannice; Ken Vannice LLC; I; G

**Visitors:**

Richard Cadena; PLASA  
Tucker D

**1 Opening remarks**

Michael Lay called the meeting to order at 9:06 a.m. by welcoming everyone, and announcing that 60% of America's currency is printed right here in Fort Worth, TX.

**2 Attendance**

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

A bright yellow sign-in sheet was circulated while self-introductions took place.

**2.2 Determination of a quorum**

By counting voters' raised hands, Michael Lay announced a quorum and that a majority of the working group present.

**2.3 Recognition of alternate voting members**

**3 Membership**

### 3.1 Requirements for membership

*The following statement was read aloud to the assembly by Michael Lay:*

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

No members were moved to Observer status at this meeting due to lack of attendance.

### 3.3 Processing of new membership requests

As of 27 March 2014, the following applications were received:

Claude Ostyn; Full Throttle Films/ VER; A; DR

Hyun Jong Kim; Electronics and Telecommunications Research Institute; A; G

Casey Diers; Designlab Chicago; A; DR

Roger Lattin moved to accept the applications. The motion was seconded and approved by a show of hands.

### 3.4 Consensus body

*The full consensus body of this working group at the time of this meeting, including those not present, was:*

Name	Representing	Voting status	Interest category
Kevin Loewen	Acuity Brands Inc.	P	MP
Robert Bell	Acuity Brands Inc.	A	MP
Gary Douglas	Acuity Brands Inc.	A	MP
Philip Nye	Acuity Brands Inc.	A	MP
Garrett Gallant	Acuity Brands Inc.	A	MP
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Edward A. (Ted) Paget	Daktronics Inc.	P	G
Larry Schoeneman	DesignLab Chicago, Inc.	P	DR
Casey Diers	DesignLab Chicago, Inc.	A	DR
Ulrich Kunkel	DIN, NVBF Committee	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	P	MP
Milton Davis	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
Sang-Kyu Lim	Electronics and Telecommunications Research Institute	P	G
Hyun Jong Kim	Electronics and Telecommunications Research Institute	A	G
Scott M. Blair	Full Throttle Films/ VER	P	DR
Jeremy Hochman	Full Throttle Films/ VER	A	DR
Claude Ostyn	Full Throttle Films/ VER	A	DR
Robert Goddard	Goddard Design Co.	P	MP

Name	Representing	Voting status	Interest category
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	Ken Vannice LLC	I	G
Tyrone Mellon_Jr.	Lex Products Corp.	P	CP
Joshua Liposky	Lex Products Corp.	A	CP
Michael Karlsson	LumenRadio AB	P	MP
Marcus Bengtsson	LumenRadio AB	A	MP
Hans Lau	LumenRadio AB	A	MP
Peter Kirkup	LumenRadio AB	A	MP
Simon Newton	Open Lighting Project	P	G
Charles Reese	Production Resource Group	P	DR
Michael Lay	Royal Philips	P	MP
Kimberly Corbett Oates	Schuler Shook	P	DE
Eckart Steffens	Soundlight, the DMX Company	P	CP
Mitch Hefter	USITT	P	U
<b>Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter</b>			
<b>Votes by Interest Category:</b>			
Custom-market producer		CP	3
Designer		DE	1
Dealer or rental company		DR	3
General interest		G	5
Mass-market producer		MP	8
User		U	4
<b>Total votes possible:</b>			<b>24</b>

#### 4 Approval of the minutes from the January meeting

See CPmin01-2014.pdf.

Ted Paget moved to approve the January minutes. The motion was seconded and passed by a show of hands.

#### 5 Reading of the call for patents

The following statement was read aloud to the assembly by Michael Lay:

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 NEW anti-trust statement**

*The following statement was read aloud to the assembly by Erin Grabe:*

PLASA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all PLASA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will do business with or the markets in which members will conduct business.

Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at a PLASA meeting, please bring your concern to PLASA management. An easy to read pamphlet describing the antitrust laws is available from the PLASA staff.

Karl Ruling held up the pamphlet to show the group. Nothing was reported.

## **7 Approval of agenda**

Larry Schoeneman moved to approve the agenda as drafted. The motion was seconded and approved by a unanimous show of hands.

## **8 Old business**

### **8.1 Standards Maintenance**

*Any news or action needed on any of the following standards? This is a placeholder in the agenda, so we don't forget to maintain them. Documents prefaced with an emboldened asterisk (\*) are on the agenda for discussion.*

Michael Lay asked for any news or action on the following documents, save the asterisked items:

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 by 2016)

ANSI E1.11 – 2008 (R2013), Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. (Revision, reaffirmation, or withdrawal by 2018)

ANSI E1.20 - 2010, Remote Device Management over USITT DMX512. (Revision, reaffirmation or withdrawal by 2016)

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 by 2016)

\* 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 by 2014)

ANSI E1.30-1 - 2010, EPI 23, Device Identification Subdevice. (Revision, reaffirmation or withdrawal by 2016)

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

ANSI E1.30-4 – 2010, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. (Revision, reaffirmation, or withdrawal by 2015)

\* ANSI E1.30-7 – 2009, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts. (Revision, reaffirmation, or withdrawal by 2014)

\* ANSI E1.30-10 – 2009, EPI 32, Identification of Draft Device Description Language Modules. (Revision, reaffirmation, or withdrawal by 2014) \*

ANSI E1.37-1 - 2012, Additional Message Sets for ANSI E1.20, Remote Device Management. (Revision, reaffirmation, or withdrawal by 2017)

ANSI E1.45-2013, Unidirectional Transport of IEEE 802 data frames over ANSI E1.11 (DMX512-A) (Revision, reaffirmation, or withdrawal by 2018)

## **8.2 Reaffirmation of 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**

*See E1-27-2\_PubRevwCmmntsSmmry.pdf*

*One "Yes" was received during the public review. No objections to consider.*

Roger Lattin moved that we reaffirm E1.27-2. The motion was seconded. Hearing no further discussion, Michael Lay announced that the motion will be decided by letter ballot per the Policies and Procedures.

Karl Ruling spoke to the group on the letter ballot voting options they will have. He clarified that voters who vote "Yes" want the document reaffirmed. Those who vote "Yes with comments" or "No with reasons" are seeking a longer discussion and reconsideration of the motion by this group.

## **8.3 Reaffirmation ANSI E1.30-3 – 2009, EPI 25, Time Reference in ACN Systems Using SNTP and NTP**

*See E1-30-3\_PubRevwSummry.pdf*

*No comments were received; none need to be considered.*

Mitch Hefter moved that we reaffirm E1.30-3. The motion was seconded. Hearing no further discussion, Michael Lay announced that the motion will be decided by letter ballot per the Policies and Procedures.

## **8.4 Reaffirmation ANSI E1.30-7 – 2009, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts**

*See E1-30-7\_PubRevwCmmntsSmmry.pdf*

*Thirteen comments were received by three commenters; the objections need to be resolved.*

There was a brief discussion as to how to resolve the comments. The task group, headed by Scott Blair, will meet at the July meetings to work on draft responses.

## **8.5 Reaffirmation of ANSI E1.30-10 – 2009, EPI 32, Identification of Draft Device Description Language Modules**

*See E1-30-10\_PubRevwSummry.pdf*

*No comments were received; none need to be resolved.*

Ted Paget moved to reaffirm E1.30-10. The motion was seconded. Hearing no further discussion, Michael Lay announced that the motion will be decided by letter ballot per the Policies and Procedures.

## **8.6 Revision of ANSI E1.17 - 2010, Architecture for Control Networks**

*Public review of EPI 19, ACN Discovery on IP Networks . See SummryE1-17\_EPI-19\_Cmmnts.pdf.*

Comments were received. Maya Nigrosh said that she would resolve the issues by correcting the errors and circulating the revised document to interested parties. She advised that comment resolutions and a revised draft would be available for the July meeting.

It was noted to the group that Nicholas Wagner's comment is outside the scope of the document.

## **8.7 BSR E1.31 with Universe Synchronization**

*Update?*

*From the draft January minutes:*

*[Maya Nigrosh] agreed to continue work on the document between this meeting and the next, with the intent of submission for public review in March.*

Scott Blair moved that the draft be offered for public review. The motion was seconded and approved by a show of hands, with no further discussion. TSC letter ballot to be issued for approval.

## **8.8 BSR E1.33, Transport of ANSI E1.20 (RDM) in an E1.31 environment**

*From the draft January minutes:*

*Jason Potterf and Simon Newton are working on this document and hope to have a clean version for March with the intent on voting for public review in July.*

Scott Blair reported on the draft document that had been circulated. It has comments incorporated into it, but the discovery mechanism portion is not done yet. Jason Potterf is to be the principal author of that section, and has been overwhelmed with events in his personal life.

Would like to send it to public review before the July meetings. The motion would be to:

- accept the comment resolutions
- accept the revised standard as a valid implementation of the resolutions
- and to offer the draft standard for public review.

Scott Blair made a motion to the effect of the above statement. The motion was seconded, and the plan was approved with a show of hands.

## **8.9 BSR E1.30-11, EPI 33**

Scott Blair and Simon Newton submitted *BSRE1-30-11\_EPI33-ACNRootLayerProtocolOperationonTCP.pdf*, for distribution to the working group with the intention of sending the draft for public review.

Scott Blair reported on the changes incorporated into the draft, adding that the task group's intent to offer the draft for public review.

Roger Lattin motioned to offer the draft for public review. The motion was seconded. There was a brief discussion, and the motion passed by a show of hands, with no objections or abstentions. TSC letter ballot to be issued for approval.

## **8.10 BSR E1.37-2, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages**

*From the draft January minutes:*

*Simon Newton reported that the document was not ready for this meeting, but that there should be a document for this group to consider in March.*

*See BSRE1.37-2\_IPv4MessagePIDs\_20140312.pdf.*

Scott Blair moved that the draft standard be offered for public review (its fourth review). The motion was seconded. It was noted that there were no previous public review comments to resolve. The motion was approved by a show of hands with no objections or abstentions. TSC letter ballot to be issued for approval.

#### **8.11 BSR E1.37-3, E1.20 Support for E1.45 devices and VLC luminaires**

*Update? See E1-37-3\_TSP\_ProjectRequest\_Sang-Kyu Lim.pdf.*

*From the draft January minutes:*

*Kimberly Corbett Oates requested a task group meeting in Ft. Worth in March, and noted the interest of Scott Blair, Sang-Kyu Lim, Philip Nye, Maya Nigrosh, Kevin Loewen, and Bob Goddard to being a part of the task group. Possible designation of BSR E1.37-3.*

Michael Lay reported that the Technical Standards Council had approved this project at their meeting.

Sang-Kyu Lim reported that with the working group's approval of the project in January, the first meeting of the task group is being held immediately following this meeting. New member Hyun Jong Kim, of ETRI, will be presenting the material previously circulated. The task group's goals are PID identification and format construction, with the intent of beginning to draft the standard.

#### **8.12 BSR E1.37-4, Firmware updates via ANSI E1.20, RDM**

*From the draft January minutes:*

*Peter Willis motioned that a task group be formed to draft a document. He wants to limit the project simply to doing firmware update and estimates that two PIDs are needed.*

*The motion was seconded and approved by a show of hands with 19 in favor and 1 abstention, which was a supermajority voting in favor. The task group is appointed as Scott Blair, Kevin Loewen, Paul Kleissler, Hamish Dumbreck, Milton Davis, Peter Kirkup; Oliver Waits, Simon Newton, Jason Potterf, and Peter Willis as the chair. Karl Ruling announced the possible designation for this project as BSR E1.37-4, Firmware updates via ANSI E1.20, RDM.*

*Standards Project Request form needed to initiate this project.*

Karl Ruling read an email he had received from Peter Willis. It read as follows:

(1) Please find attached the project request form for the formalisation of the "File Transfer Control to provide Firmware Upload Capabilities" project discussed at the CPWG meeting in January.

(2) Report for the CPWG meeting at USITT

A draft of the proposed "File Transfer Control to provide Firmware Upload Capabilities" standard has been prepared by Peter Willis and Hamish Dumbreck, and will be outlined and discussed in detail at the European RDM and sACN Developers conference and plugfest, being held in April 2014, at Gatwick Manor in the UK. After this time, and assuming that the necessary prototype coding work has been completed, the draft document will be circulated to those task group members who met informally in January, for further discussion and review.

It should be noted that many of the individuals who expressed an interest in this project in January will be attending the European event in April. It is recognised that the project is unlikely to gain formal TSC recognition until the July meeting cycle, but I anticipate that this will coincide with the existence of a substantial body of work for the North American meetings to consider. (The current "work in progress" document comes in at about 54 pages) It is anticipated that some task group time will be required at the July meetings in Dallas to progress this further, although this depends somewhat on the outcome of the European conference in April.

(3) I have also attached a copy of the information sheet relating to the European Plugfest, and would ask you to remind all CPWG attendees of the need to sign up NOW if they are planning on attending. All details can be found from this link <http://www.plasa.org/rdm/>

regards and best wishes to all  
Peter Willis

PS : Please accept my apologies that I am unable to attend the USITT sessions.

There is nothing further for this body to consider at this time.

### **8.13 BSR E1.37-5, General Purpose Messages for ANSI E1.20 RDM**

*Update? See E1-37-5\_GeneralPIDSProjectForm.pdf.*

A project request form has been received. Scott Blair reported on the progress of this document. More to follow.

### **8.14 BSR E1.37-x, Additional Message Sets for ANSI E1.20, LED walls and video displays**

*From the draft January minutes:*

*There is no new progress, reported Scott Blair, but it is on the to-do list after more pressing work is completed.*

BSR E1.33 should be finished before work on this can be completed. Scot Blair addressed the group and called for participants after RDMnet gets off the ground.

### **8.15 European Plugfest**

*Update?*

See EU-Plugfest-About-2014 r1.5.pdf sent by Peter Willis. There was no further report.

### **8.16 Texas Plugfest**

*Update?*

Scott Blair reported that the US Plugfest is on the calendar and that it will follow the same format as previous Plugfests. The Plugfest will run Friday through Monday, 25-28 July 2014.

## **9 New business**

No new business.

## **10 Other business & announcements**

Roger Lattin offered the use of his coupon for a special low price on the NFPA's National Electrical Code, NFPA 70, including the PDF version.

There was no other other business or announcements

### **10.1 Above & Beyond Awards**

*The nomination site is open year round at [tsp.plasa.org/AboveandBeyond](http://tsp.plasa.org/AboveandBeyond).*

Michael Lay clarified the nomination process and pointed out the nomination website.

### **10.2 TSP sessions at LDI 2014**

*The TSP is currently accepting content to fill both the 90-minute educational sessions and in-booth presentations. The deadline for title, abstract, moderator, and panelist information is 15 April 2014.*

Erin Grabe reported on the call for content, noting the early deadline.

Scott Blair offered the RDMnet session, but asked for a Friday time slot.

### **10.3 USITT Sessions**

Kimberly Corbett Oates reported that initial programming for the 2015 USITT Conference will be Saturday morning, 29 March 2014.



She also asked for help on a panel about the spectrum of control protocols that exists. CPWG members were asked to contact her if they are interested.

#### **11 Next meeting**

Michael Lay announced that the next meeting is scheduled for 26 July 2014 between 14:00 and 18:00 at the Marriott Solana in Westlake, TX. Current information is available at <http://na.plasa.org/news/meetings.php>.

#### **12 Adjournment**

A motion to adjourn was made by Roger Lattin. The motion was seconded. Hearing no objections, Michael Lay declared the meeting adjourned at 10:02 a.m.

Name	Company	Representing	Voting status	Int. Cat.
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
Matthew Ardine	IATSE Local 728	IATSE Local 728	O	U
Avraham Mendall Mor "Avi"	Lightswitch	Lightswitch	O	U
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Paul Beasley	Walt Disney Imagineering	Walt Disney Company	O	U
Robert Bell	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
BenDarrington	Wireless Solutions Sweden AB	Wireless Solutions Sweden AB	O	MP
Marcus Bengtsson	LumenRadio AB	LumenRadio AB	A	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	O	G
André Broucke	André Broucke	André Broucke	O	G
Ken Bruns	Lumenpulse Lighting Inc.	Lumenpulse Lighting Inc.	O	MP
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Justyn Butler	JBOTS	JBOTS	O	CP
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP

Name	Company	Representing	Voting status	Int. Cat.
Nyasha Chigwamba	Dept. of Computer Science	Rhodes University	O	U
Sang-Il Choi	Kyungpook National University	Kyungpook National University	O	G
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
Fraser Connolly	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	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
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Jeremy Day	Philips Color Kinetics	Royal Philips	O	MP
Gilray Densham	CAST Software	CAST Group Inc	O	MP
Casey Diers	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	A	DR
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
Lauren E. Dunn	Lauren E. Dunn (Larry)	Lauren E. Dunn (Larry)	O	DE
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
James Eade	PLASA	PLASA EU	O	G
Andrew Eales	Wellington Institute of Technology	Rhodes University	O	U
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Paul K. Ericson	Sparling	Sparling & IES	O	DE
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP

Name	Company	Representing	Voting status	Int. Cat.
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
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
Erin Grabe	PLASA NA	PLASA NA	exf	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
Douglas Heriot	Douglas Heriot	Douglas Heriot	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Jeremy Hochman	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Jim Holladay	Luxence	Luxence	O	G
Wayne David Howell	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	DE
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Sierk Janszen	Kiss Box	Ground Zero	O	U
Eric Johnson	Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP

Name	Company	Representing	Voting status	Int. Cat.
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	G
Michael Karlsson	LumenRadio AB	LumenRadio AB	P	MP
Reza Khanmalek	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Hyun Jong Kim	ETRI	Electronics and Telecommunications Research Institute	A	G
Peter Kirkup	LumenRadio AB	LumenRadio AB	A	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	P	MP
Rick Leinen	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	O	MP
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	P	G
Joshua Liposky	Lex Products Corp.	Lex Products Corp.	A	CP
Kevin Loewen	Pathway Connectivity Inc.	Acuity Brands Inc.	P	MP

Name	Company	Representing	Voting status	Int. Cat.
Mark Manthei	Shure Inc.	Shure Inc.	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	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
Jeff T. Miller	Worldwide Standards and Auditing	Walt Disney Company	O	U
John Musarra	John Musarra	John Musarra	O	U
Tobin Neis	Barbizon Companies	Barbizon Companies	O	DR
Simon Newton	Open Lighting Project	Open Lighting Project	P	G
Dan T. Nguyen	LynTec	LynTec	O	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Philip Nye	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Kimberly Corbett Oates	Schuler Shook	Schuler Shook	P	DE
Claude Ostyn	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
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
Ben Peoples	Pittsburgh Hoist & Sandbag Company	Pittsburgh Hoist & Sandbag Company	O	CP
Jason Potterf	Cisco	Cisco	P	MP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Gordan Rancic	Phoenix Service srl	Phoenix Service srl	O	MP
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
Steve Roberts	Carr & Angier	Carr & Angier	O	G

Name	Company	Representing	Voting status	Int. Cat.
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	MP
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Karl G. Ruling	PLASA NA	PLASA NA	exf	G
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.	P	DR
Martin Searancke	Dream Solutions Ltd.	Dream Solutions Ltd.	O	MP
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	Open Lighting Project	Open Lighting Project	O	DE
Storm K. Staley	Stormwerx	Stormwerx	O	U
Eckart Steffens	Soundlight, the DMX Company	Soundlight, the DMX Company	P	CP
Ralph Stillinger	Strand Lighting	Royal Philips	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	O	DE
Robert Timmerman	Philips Color Kinetics	Royal Philips	O	MP
David Timmins	Jands Electronics	Jands Electronics	O	MP
Victoria Tisdale	Colby College	Google Summer of Code 2013	O	G
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP

Name	Company	Representing	Voting status	Int. Cat.
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
Tracy Underhill	4U Consulting	4U Consulting	O	G
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Samuli Valo	Picturall Ltd.	Picturall Ltd.	O	MP
Ken Vannice	Ken Vannice LLC	Ken Vannice LLC	I	G
Carlo Venturati	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Oliver Waits	Avolites Ltd.	Avolites Ltd.	O	MP
John Warwick	Philips Color Kinetics	Royal Philips	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



**Voting Status Key:**

**P = Principal voter, A = Alternate voter, I = Individual voter, O = Observer member**

**Interest Category Key:**

**CP = Custom-market producer, DE = Designer, DR = Dealer or rental company, G = General interest, MP = Mass-market producer, U = User**