

Minutes Control Protocols Working Group

Thursday, 21 October 2004
Harrah's Las Vegas Casino & Hotel
Las Vegas, NV

Chairmen: Steve Terry; Electronic Theatre Controls, Inc.; A; MP
Tracy Underhill; Electronics Diversified Inc.; P; MP

Recording secretary: Karl G. Ruling; ESTA

Members attending: Jean-Francois Canuel; Spectrum Manufacturing Inc. (A.C. Lighting Ltd.); O; CP
Tim Bachman; A.C.T Lighting, Inc.; P; DR
Arnold Tang; Arnold Tang Productions; P; U
J. B. Toby; Avolites Ltd.; Avolites Ltd.; O; MP
Tobin Neis; Barbizon Companies; Barbizon Companies; P; DR
Bill Ellis; Candela Controls, Inc.; Candela Controls, Inc.; O; U
Will Wagner; Carallon Ltd.; O; MP (joined at this meeting)
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
Philip Nye; Engineering Arts; P; G
Scott M. Blair; High End Systems Inc.; P; MP
Steve Carlson; High Speed Design, Inc.; O; MP
Alan Martello; Horizon Control Inc.; P; MP
Robert Bell; Horizon Control Inc.; A; MP
Peter Willis; Howard Eaton Lighting Ltd.; P; CP
Roger Lattin; I.A.T.S.E. Local 728; P; U
Mark Jensen; Intelligent Control Devices; P; CP (joined at this meeting)
George Kindler; Kelley Technologies LLC; P; DR
Rick Leinen; Colortran (Leviton Manufacturing Co., Inc.); P; MP
Daniel Weiermann; Mainstage Theatrical Supply - Milwaukee (Mainstage Theatrical Supply); A; DR
Ole Bystrup; Martin Professional A/S; P; MP
Edward R. Condit; On Location Lighting Systems; O; DR
Stuart Cotts; Oregon Shakespeare Festival; O; U
Greg Reimer; Pathway Connectivity Inc.; O; MP
Kevin Loewen; Pathway Connectivity Inc.; A; MP
Richard Thornton Brown; i Light Group (Polaron PLC); P; MP (rejoined with new parent company)
Charles Reese; Production Resource Group; P; DR
Hans Lau; Sand Network Systems; P; MP
Jon R. Farley; Sixteenth Avenue Systems; O; CP
Richard Lawrence; Strand Lighting Ltd.; P; MP
Michael Lay; Strand Lighting (Strand Lighting Ltd.); A; MP
Pete Baselici; The Watt Stopper; O; MP (joined at this meeting)
Stéphane Jacob; TIR Systems Ltd.; P; MP (joined at this meeting)
Torrey Bievenour; Vision Quest Lighting; O; G

No visitors.

1 Opening remarks

Steve Terry called the meeting to order at 09:00.

2 Attendance

2.1 Introductions of those present and circulation of attendance sheet

Steve Terry asked those present to introduce themselves, which they did, proceeding in a clockwise direction around the large U-shaped table.

Javid Butler had sent regrets for not being able to attend. Mainstage's office in Pensacola lost its roof during Hurricane Ivan, and he needed to stay in Florida to take care of business matters that resulted from this damage.

Mitch Hefter also had sent his regrets. He could not attend because he was a participant in the "Jolts and Volts" session at ETS-LDI.

2.2 Determination of a quorum

Steve Terry announced that a quorum was present.

2.3 Recognition of alternate voting members

Steve Terry asked if there were any alternates who are present with their principal voting member. He reminded them that only one may vote.

3 Membership

3.1 Requirements for membership

Steve Terry reminded the assembly that membership is open to all who are affected by the work of the group. 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 Processing of new membership requests

The following applications had been received, and Steve Terry read them aloud:

Mark G. Jensen; Intelligent Control Devices; principal; CP
Will Wagner; Carrallon Ltd.; observer; MP
Greg Reimer; Pathway Connectivity; observer; MP
Stéphane Jacob; TIR Systems Ltd.; principal; MP
Jiantong Wu; Beijing Special Engineering Design & Research Institute; observer; G
Steve Roberts; Carr & Angier; observer; G
Lars Wernlund; Lewlight; observer; MP
Paul Kenneth McEwen; Northern Light; observer; DR
Pete Baselici; The Watt Stopper; observer; MP
Richard Thornton Brown; iLight Group (Polaron PLC); principal; MP

Peter Willis moved that the applications be accepted. The motion was seconded. The motion was approved by a unanimous show of hands.

The voting body during this meeting, including those not present, was thus:

Name	Company	Representing	Voting status	Interest category
Tim Bachman	A.C.T Lighting, Inc.	A.C.T Lighting, Inc.	P	DR
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	CP
Simon Hobday	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	A	CP
Tobin Neis	Barbizon Companies	Barbizon Companies	P	DR
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Ken Wagner	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Tracy Underhill	Electronics Diversified Inc. (Colorado)	Electronics Diversified Inc.	P	MP

Name	Company	Representing	Voting status	Interest category
James Johnson	Electronics Diversified Inc.	Electronics Diversified Inc.	A	MP
Philip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Scott M. Blair	High End Systems Inc.	High End Systems Inc.	P	MP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	A	MP
Jason Potterf	High End Systems Inc.	High End Systems Inc.	A	MP
Alan Martello	Horizon Control Inc.	Horizon Control Inc.	P	MP
Robert Bell	Horizon Control Inc.	Horizon Control Inc.	A	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	A	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Mark Jensen	Intelligent Control Devices	Intelligent Control Devices	P	CP
George Kindler	Kelley Technologies LLC	Kelley Technologies LLC	P	DR
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
John (Javid) D. Butler	Mainstage Theatrical Supply, Inc.	Mainstage Theatrical Supply	P	DR
Daniel Weiermann	Mainstage Theatrical Supply, Milwaukee	Mainstage Theatrical Supply	A	DR
Ole Bystrup	Martin Professional A/S	Martin Professional A/S	P	MP
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Richard Thornton Brown	i Light Group	Polaron PLC	P	MP
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Hans Lau	Sand Network Systems	Sand Network Systems	P	MP
Michael A. (Sandy) Twose	Sand Network Systems	Sand Network Systems	A	MP
Yngve Sandboe	Sand Network Systems	Sand Network Systems	A	MP
Michael Gonzales	Spectrum Lighting Inc.	Spectrum Lighting Inc.	P	DR
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	MP
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	MP
Stéphane Jacob	TIR Systems Ltd.	TIR Systems Ltd.	P	MP
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
		Total votes	27	
		Votes by interest category	13	MP
			3	CP
			6	DR
			4	U
			1	G

4 Approval of the minutes from the previous meeting

Daniel Weiermann moved that the draft minutes be approved as written. The motion was seconded. the motion was approved with a unanimous show of hands.

5 Reading of the call for patents

Tracy Underhill read the following statement aloud to the assembly:

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

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

No patents or other protected intellectual property was brought to the attention of the assembly at this time.

Steve Terry asked Karl Ruling to share with the group the letter that he had written recently to Steve Carson of Genlyte asking for reaffirmation of the Vari-Lite patent licensing letter and asking that the non-discriminatory, reasonable terms for patent licensing be extended to cover possible implementations of E1.20. Ruling did so. He also read the licensing statement he had received from Richard Belliveau of High End Systems. There was a brief discussion of patents.

6 The reading of the anti-trust statement

Tracy Underhill read the following aloud to the assembly:

"The ESTA 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 chair 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 ESTA president immediately.

"ESTA 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 \$100,000 and imprisoned for up to three years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

No anti-trust or restraint of trade issues were brought to the attention of the assembly.

7 Approval of agenda

Roger Lattin moved that the draft agenda be accepted. The motion was seconded. The motion was approved with a unanimous show of hands.

8 Old business

8.1 BSR E1.20 Remote Device Management

Karl Ruling reported that the document is in public review and will be through December 7. Scott Blair described the work the task group is continuing to do on the bulk data upload procedure.

8.3 E1.17 Multipurpose Control Network Protocol Suite

Dan Antonuk reported the progress of the task group. He explained that all the small EPI documents are sets of detailed specifications for some of the variables in the E1.17 standard. "EPI" stands for "ESTA Protocol Interface." The task group has resolved all the comments and modified the draft standard and its documents, but not all these revised and new documents had been distribute to the working group outside the task group. There was a discussion of the way forward for this project.

Dan Antonuk moved that

- (a) the resolutions shall be approved,
- (b) that the revised documents are a fair implementation of the public review resolutions
- (c) that the revised standard documents shall be sent to a second public review.

The motion was seconded. Since the documents had not been distributed to the working group at least two weeks before the meeting, it was agreed that the above combined motion shall be decided by letter ballot.

8.4 E1.27-1 Portable cabling

Karl Ruling reported that the document is in public review and will be through December 7.

8.5 Other E1.27 projects

Daniel Weiermann reported on behalf of Javid Butler on the E1.27 task group's projects. The task group is working on a permanent cabling standard. They had a good meeting in Ft. Worth, but did

find some issues that needed work, particularly Cat 5e versus Cat 5, since Pathway Connectivity's EMC studies had been done with Cat 5 cable.

Steve Carlson advised that Cat 5e cable is in every respect superior to Cat 5 and its use should be encouraged. Furthermore, what constitutes good practice for using Cat 5 would be equally applicable to Cat 5e.

8.6 Leadership nomination ad hoc committee —

The ad hoc task group of Willis, Antonuk, & Blair presented the proposal of the ad hoc committee:

"CPWG co-chairs shall be appointed for a two year term. There is no limit to the number of times a chair may be reappointed. Terms shall be staggered such that one co-chair is elected each year.

"Nominations for the open position shall be accepted at the Summer meeting. Any CPWG member (principal or alternate) willing to stand may be nominated and candidates may nominate themselves. The outgoing chair shall automatically be considered a candidate for re-election.

"Selection between the candidates shall take place by instant run-off letter ballot of the entire CPWG voting membership following the meeting.

"The secretary shall present the results of the Letter Ballot to the CPWG and the TSC at the Autumn meetings for consideration, with a recommendation that the new chair begin his or her term with the January meetings.

"Having an active task group chair also serving as CPWG co-chair is discouraged."

Scott moved that the above procedure shall be adopted by the working group. The motion was seconded. The motion was approved by a unanimous show of hands.

Dan Antonuk advised Karl Ruling that instant run-off ballot procedures are readily available on the Web. [A good explanation of those procedures taken from http://www.fairvote.org/irv/irv_orgs.htm is appended to these minutes.]

There was a discussion of the timing of the meetings, and it was suggested that the TSC meet after the working groups to act on working group actions. Steve Terry and Karl Ruling said this proposal had merit and would be discussed with the TSC and ESTA staff.

8.7 E1.11 Recommended Practice

Tim Bachman reported that Peter Willis, Javid Butler, and he are the task group. They have an outline for the document, which is really two documents. One would be a handbook for systems integrators and users. The second document would be a product design guide for manufacturers.

9 New business

None.

10 Other business

10.1 Peter Willis reported on the PLASA CP breakfast meeting. All who had been there agreed that the session went well. Steve Terry remarked on the number of new faces there; not all the players in the industry are members of the TSP's Control Protocols Working Group.

10.2 There was a quick reminder of the CP-related sessions at ETS-LDI.

10.3 There was a discussion, initiated by Steve Carlson, of the emerging market for networking products that are more powerful than home office stuff but smaller than large enterprise networking products. This space in between the two is where a lot of entertainment technology equipment fits. There was

interest in having some developers of this equipment address the CPWG on a meeting afternoon, perhaps at one of the Ft. Worth meetings.

10.4 Steve Carlson reported on his work on the Residential Ethernet committee. The committee is working on a way to distribute video and audio data within strict timing constraints. This would be really a form of synchronous Ethernet, but that term is not popular because this is not seen as a technically synchronous protocol. The idea is to be able to deliver digital content with predictable timing. Carlson said that the synchronous transport would be valuable for many live entertainment industry projects.

10.5 Steve Carlson reported he has been approached by people who thought that ACN might be useful as a high level control protocol for a variety of residential products. Carlson said he doesn't know where this will go, but that this shows the rising profile of the ESTA Technical Standards Program.

11 Schedule for future meetings

Steve Terry announced that the next working group meeting was scheduled for January 15, 2005 at the Dallas/Ft. Worth Airport Marriott South in Ft. Worth, Texas. The following meetings will be March 17 and July 30.

12 Changes to observer status due to lack of attendance

Voting principals and alternates who together have missed the previous two meetings in a row and will be moved to observer status if this meeting also is missed:

Alfred Langguth; Embedded Controls by Design

The question of Langguth's voting status was moot by the time of this meeting. Alfred Langguth of Embedded Controls by Design had asked Karl Ruling on October 5 to withdraw his membership from the working group, citing a changed focus for his company and a relocation to Europe.

13 Adjournment

Scott Blair moved that the meeting adjourn. The motion was seconded and then approved by acclamation. Steve Terry declared the meeting adjourned at 10:52.

Working Group Membership and Contact Data as of 2004-11-04

Name	Company	Representing	Vote status	Int. cat.
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Josh Koffman	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Tim Bachman	A.C.T Lighting, Inc.	A.C.T Lighting, Inc.	P	DR
Andre Broucke	ADB - TTV Technologies	ADB-TTV Group	O	MP
John Sellers	AIM Northwest	AIM Northwest	O	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	CP
Simon Hobday	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	A	CP
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
Raymond Wynn	AVL Systems Pty Ltd.	AVL Systems Pty Ltd.	O	MP
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP
Shahid Anwar	Avolites Ltd.	Avolites Ltd.	O	MP
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	MP
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
Tobin Neis	Barbizon Companies	Barbizon Companies	P	DR
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	MP
Lee J. Bloch	Blue Sky Design, Ltd.	Blue Sky Design, Ltd.	O	G
Soo-Myong Chung	Blue Sky Design, Ltd.	Blue Sky Design, Ltd.	O	G
Bradley Klinkradt	Bradley Klinkradt	Bradley Klinkradt	O	G
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Steve Roberts	Carr & Angier	Carr & Angier	O	G
Rick Szijarto	Cast Software	Cast Group of Companies, Inc.	O	CP
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	G
Larry Dunn	City Theatrical, Inc.	City Theatrical, Inc.	O	CP
Fabiano Pina	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Woody Smith	Coemar USA Inc.	Coemar USA Inc.	O	MP
Ohad Ashery	Compulite Systems	Compulite Systems	O	MP
Simeon Aladjem	Compulite Systems	Compulite Systems	O	MP
Yehuda Shukram	Compulite Systems	Compulite Systems	O	MP
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	G
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Bob Toms	Design Advantage LLC	Design Advantage LLC	O	G
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Ken Wagner	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	O	CP
Joost van Eenbergen	ELC Lighting	ELC Lighting	O	MP
Bill Fehrmann	Electrol Engineering, Inc.	Electrol Engineering, Inc.	O	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	MP
Hans Leiter	Transtechnik Lichtsysteme GmbH & Co. KG	Electronic Theatre Controls, Inc.	O	MP
Anders Ekvall	Transtechnik Lichtsysteme GmbH	Electronic Theatre Controls, Inc.	O	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Tracy Underhill	Electronics Diversified Inc. (Colorado)	Electronics Diversified Inc.	P	MP

Name	Company	Representing	Vote status	Int. cat.
James Johnson	Electronics Diversified Inc.	Electronics Diversified Inc.	A	MP
Philip Nye	Engineering Arts	Engineering Arts	P	G
Erwin Rol	Erwin Rol	Erwin Rol	O	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Sierk Janszen	Ground Zero	Ground Zero	O	U
Liao Wei Min	GuangZhou HeDong Electronic Co., Ltd.	GuangZhou HeDong Electronic Co., Ltd.	O	G
Alan P. Symonds	Harvard College	Harvard University	O	U
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Scott M. Blair	High End Systems Inc.	High End Systems Inc.	P	MP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	A	MP
Jason Potterf	High End Systems Inc.	High End Systems Inc.	A	MP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP
Alan Martello	Horizon Control Inc.	Horizon Control Inc.	P	MP
Robert Bell	Horizon Control Inc.	Horizon Control Inc.	A	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Edwin S. Kramer	I.A.T.S.E, Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	A	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Gian Carlo C. Bartolotti	Ibeam SP / Banco de Eventos	Ibeam SP / Banco de Eventos	O	U
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
Mark Jensen	Intelligent Control Devices	Intelligent Control Devices	P	CP
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Larry Schoeneman	Interesting Products, Inc.	Interesting Products, Inc.	O	G
David Timmins	Jands Electronics	Jands Electronics	O	MP
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	O	G
Christopher Purpura	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	O	G
George Kinder	Kelley Technologies LLC	Kelley Technologies LLC	P	DR
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
Lars Wernlund	Lewlight	Lewlight	O	MP
Klaus Amling	Licht-Technik	Licht-Technik	O	P
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Simon Alpert	Lighttech Event Technologies	Lighttech Event Technologies	O	CP
Gary Pritchard	LSC Lighting Systems PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Bart Swinnen	Luminex LCE	Luminex LCE	O	MP
J. P. Steiner	Lutron Electronics	Lutron Electronics	O	MP
Jim Holladay	Luxence	Luxence	O	G
John (Javid) D. Butler	Mainstage Theatrical Supply, Inc.	Mainstage Theatrical Supply	P	DR
Daniel Weiermann	Mainstage Theatrical Supply - Milwaukee	Mainstage Theatrical Supply	A	DR
Ole Bystrup	Martin Professional A/S	Martin Professional A/S	P	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Paul McEwan	Northern Light	Northern Light	O	DR
Petri Laine	Obelux Oy	Obelux Oy	O	CP

Name	Company	Representing	Vote status	Int. cat.
Edward R. Condit	On Location Lighting Systems	On Location Lighting Systems	O	DR
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	O	U
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
William Benner	Pangolin Laser Systems	Pangolin Laser Systems	O	MP
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Greg Reimer	Pathway Connectivity Inc.	Pathway Connectivity Inc.	O	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
James Eade	PLASA	PLASA	O	G
Mac Perkins	PNTA Inc.	PNTA Inc.	O	G
Richard Thornton Brown	i Light Group	Polaron PLC	P	MP
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP
Douglas Franz	QVC Network	QVC Network	O	U
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP
Hans Lau	Sand Network Systems	Sand Network Systems	P	MP
Michael A. (Sandy) Twose	Sand Network Systems	Sand Network Systems	A	MP
Yngve Sandboe	Sand Network Systems	Sand Network Systems	A	MP
Kenneth Mockler	Sceno Plus	Sceno Plus	O	U
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Michael Gonzales	Spectrum Lighting Inc.	Spectrum Lighting Inc.	P	DR
Ujjal Kar	Standard Robotics & Lighting	Standard Robotics & Lighting	O	G
Ted Fregon	State Automation	State Automation	O	MP
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	MP
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	MP
Paul K. Ericson	Syska Hennessy Group Lighting Design	Syska Hennessy Group Lighting Design	O	U
Stephen Bickford	T. Kondos Associates	T. Kondos Associates	O	U
Tad Trylski	Tad Trylski	Tad Trylski	O	U
Klas Dalbjorn	Labgruppen AB	TC Group	O	MP
Pete Baselici	The Watt Stopper	The Watt Stopper	O	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Stéphane Jacob	TIR Systems Ltd.	TIR Systems Ltd.	P	MP
Colin Waters	TMB	TMB	O	U
Matt Stroud	University of Texas at Austin	University of Texas at Austin	O	G
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Eckart Steffens	SOUNDLIGHT	VPLT	O	G
Eric Cornwell	West Side Systems	West Side Systems	O	U
John Sondericker III	Wybron, Inc.	Wybron, Inc.	O	MP

Key to codes:

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

MP mass-market producer interest category
CP custom-market producer interest category
DR dealer or rental company interest category
U user interest category
G general-interest interest category

IRV for Organizations

How to use IRV for elections in your club, congregation, or other non-governmental organization

(from http://www.fairvote.org/irv/irv_orgs.htm)

If you have any questions or would like assistance, please don't hesitate to contact us at irv@fairvote.org or 301-270-4616. Instant runoff voting is perfect for organizational elections when you have more than two people running for one office. (If you are electing several people to a body that you wish to be representative, you should use choice voting .) Counting an IRV election by hand is easy when you have fewer than a thousand ballots. If you've got more than a thousand ballots, you might want to use ballot-counting software that is available from Voting Solutions . This will require entering the data from the ballots into a computer file or using some type of ballot counting equipment that can read and store rankings. You can also use IRV when making endorsements, even if you have a "No Endorsement" or "None of the Above option."

Conducting an instant runoff election is easy. All you have to do is:

- Create the ballots
- Sort the ballots by first place votes
- Successively eliminate the weakest candidates until one candidate receives a majority of the ballots.

1. Create the ballots

The ballots must allow voters to indicate at least first, second and third choice candidates. Each voter can make his or her own ballot by simply writing down "1st choice," "2nd choice" and "3rd choice" on a piece of paper, or you can distribute pre-printed ballots to the voters. You can allow voters to rank as many candidates as you like. Either way, voters should be instructed to write in the name of their first choice candidate, their second choice candidate and the third third choice candidate.

The instructions can tell voters that they may vote for as many or as few candidates as they wish. You can also inform voters that ranking additional candidates can only help the chances of election of the ranked candidates; it can never hurt the chances of any of the voter's candidates. For example, ranking a 2nd choice candidate will never cause your 1st choice candidate to lose; it can only help the chances of your 2nd choice.

Sample ballot
Instructions to the voter

Please write the names of your 1st, 2nd and 3rd choice candidates. You may vote for as many or as few candidates as you wish.

1st Choice: _____

2nd Choice: _____

3rd Choice: _____

2. Sort the ballots

Examine each ballot to make sure that it is properly filled out. In all cases, try to honor the intent of the voter if it is clear. Only disregard a ballot if the voter's intent is not clear or if the voter voted improperly, such as by listing two candidates for first choice. Once you have examined and interpreted the ballots, sort them according to the first choice rankings. This will leave you a pile of ballots for each candidate. Count the number of votes in each pile, add them up, and determine if any candidate has received a majority of the valid votes. If so, that candidate is elected. If not, ...

3. Successively eliminate the weakest candidate

Pick up the pile of ballots for the weakest candidate (the candidate with the fewest votes), and redistribute them to the next-ranked candidate on the ballot who is still in the race. If a ballot doesn't rank any more candidates still in the race or ranks the next 2 candidates equally, the ballot is declared "exhausted" and is set aside. These ballots are not counted during the remainder of the election. After you eliminate the weakest candidate, if any candidate receives a majority of the ballots that rank candidates still in the race, the candidate is elected. Otherwise, eliminate the weakest candidate and repeat the process. One candidate is guaranteed to eventually receive a majority of the ballots that are not exhausted. Notes

If 2 or more candidates are tied for weakest candidate, draw lots to determine which candidate to eliminate first.

A majority means more than 50%, which many people think of as $50\% + 1$. Only 1 candidate can receive a majority of the vote.

A majority of 6 votes is 4 (50% of $6 = 3$, and a majority is more than 3, or 4).

A majority of 5 votes is 3 (50% of $5 = 2.5$, and a majority is more than 2.5, or 3).