

**Minutes**  
**Control Protocols Working Group**  
Saturday, 15 July 2000  
Dallas/Ft. Worth Marriott  
Irving, TX

**Chair:** Steve Carlson; High Speed Design, Inc.; principal; producer

**Recording secretary:** Karl G. Ruling, ESTA

**Attending members:** Tim Bachman; Barbizon Light; principal; user  
Larry Schoeneman; Interesting Products, Inc.; observer; general interest  
Milton Davis; Strand Lighting (Strand Lighting Ltd.); alternate; producer  
Robert Goddard; Goddard Design Co.; principal; producer  
Edward Paget; Jones & Phillips Associates, Inc.; principal; general interest  
Jerry Gorrell; Theatre Safety Programs; principal; general interest  
Mitch Hefter; Rosco/Entertainment Technology (USITT); principal; user  
Ken Vannice; NSI Corporation (Leviton Manufacturing Co., Inc.); alternate;  
producer  
Scott Blair; High End Systems; alternate; producer  
Robert Barbagallo; Proximo Inc.; principal; user  
Trevor Forrest; Helvar Lighting Control; principal; producer  
Paul F. Mardon; Pulsar Ltd.; principal; producer  
Greg Heinzle; Electronic Theatre Controls, Inc.; alternate; producer  
Brian Dowd; TMB Associates; principal; user  
John Huntington; IATSE Local 1; alternate; user  
Wayne David Howell; Artistic Licence (UK) Ltd.; principal; producer  
Tracy Underhill; Electronics Diversified Inc.; principal; producer  
Tony de Rijk; Amazing Controls! Inc.; principal; producer  
George Kindler; Thoughtful Designs (PRG); alternate; user  
Tim Cox; PLASA; principal; general interest  
Edwin S. Kramer; IATSE, Local 1; principal; user  
Edwin Jones; Edwin Jones Co., Inc.; principal, producer  
Roger Lattin; IATSE Local 728; observer; user (joined at this meeting)  
J. P. Steiner; Lutron Electronics; observer; producer (joined at this meeting)  
Charles Reese; Vari-Lite, Inc.; principal; producer (joined at the end of this  
meeting)

**Visitors:** W. G. Krokaugger, Mole-Richardson  
Jeff deRecat; Advanced Devices  
Louis Bradfield; Bally's Las Vegas

## **1 Opening Remarks**

Steve Carlson called the meeting to order at 9:05 a.m. and wished everyone a good morning. He announced that his co-chair, Steve Terry, is on vacation.

## **2 Attendance and membership**

### **2.1 Introductions of those present**

Karl Ruling asked those present to introduce themselves.

### **2.2 Determination of quorum (11 needed)**

Ruling did a quick count, determined that a quorum was present, and announced this discovery.

### **2.3 Recognition of alternate voting members**

Alternates were asked to identify themselves if they are voting in place of the principal.

George Kindler said he will be voting instead of Terry for PRG.

Ken Vannice said he will be voting for Leviton.

Scott Blair said he will be voting for High End Systems.

Milton Davis said he will be voting for Strand.

John Huntington said he will be voting for IATSE Local 1 on all DMX matters, but Eddie Kramer will vote for Local 1 on other issues.

## 2.4 Requirements for membership

Ruling reminded people that working group membership is open to all who are affected by the work of the group. There is no charge for participation and one does not need to be a member of ESTA.

However, voting members are required to attend meetings, and must pay their own expenses for doing so.

## 2.5 Processing of new membership requests

Steve Carlson read the applications for working group membership:

Merlin Milner; Leax Lighting Controls; observer, producer  
 Ujjal Kar; Standard Robotics & Lighting; observer; general interest  
 Barbara Wohlsen; Barbara Wohlsen; observer, user  
 Mac Perkins; PNTA Inc.; observer, general interest  
 Roger Lattin; IATSE Local 728; observer; user (joined at this meeting)  
 J. P. Steiner; Lutron Electronics; observer; producer (joined at this meeting)

Carlson asked for a show of support for these applications. They were accepted by acclamation.

At this point in the meeting, the voting body was:

| Name                  | Company                                 | Representing                      | Voting status | Interest category |
|-----------------------|---|-----------------------------------|---------------|-------------------|
| John Sellers          | AIM Northwest                           | AIM Northwest                     | P             | G                 |
| Tony de Rijk          | Amazing Controls! Inc.                  | Amazing Controls! Inc.            | P             | P                 |
| Peter Willis          | Andera Ltd.                             | Andera Ltd.                       | P             | P                 |
| Wayne David Howell    | Artistic Licence (UK) Ltd.              | Artistic Licence (UK) Ltd.        | P             | P                 |
| Tim Bachman           | Barbizon Light                          | Barbizon Companies                | P             | U                 |
| Tobin Neis            | Barbizon Companies                      | Barbizon Companies                | A             | U                 |
| Lee J. Bloch          | Bloch Design Group Inc.                 | Bloch Design Group Inc.           | P             | G                 |
| Soo-Myong Chung       | Bloch Design Group Inc.                 | Bloch Design Group Inc.           | A             | G                 |
| David George          | Christie Lites Manufacturing Ltd        | Christie Lites Manufacturing Ltd  | P             | P                 |
| Doug Fleenor          | Doug Fleenor Design, Inc.               | Doug Fleenor Design, Inc.         | P             | P                 |
| Ed Jones              | Edwin Jones Co.                         | Edwin Jones Co.                   | P             | P                 |
| Ed Prasser            | Electronic Theatre Controls, Inc.       | Electronic Theatre Controls, Inc. | P             | P                 |
| Dennis Varian         | Electronic Theatre Controls, Inc.       | Electronic Theatre Controls, Inc. | A             | P                 |
| Jon Ide               | Electronic Theatre Controls, Inc.       | Electronic Theatre Controls, Inc. | A             | P                 |
| Greg Heinze           | Electronic Theatre Controls, Inc.       | Electronic Theatre Controls, Inc. | A             | P                 |
| Tracy Underhill       | Electronics Diversified Inc. (Colorado) | Electronics Diversified Inc.      | P             | P                 |
| Scott Rempel          | Electronics Diversified Inc.            | Electronics Diversified Inc.      | A             | P                 |
| Philip Nye            | Engineering Arts                        | Engineering Arts                  | P             | G                 |
| Robert Goddard        | Goddard Design Co.                      | Goddard Design Co.                | P             | P                 |
| Dexter McNeil         | Goddard Design Co.                      | Goddard Design Co.                | A             | P                 |
| Dave Higgins          | Gray Interfaces                         | Gray Interfaces                   | P             | P                 |
| Michael (Sandy) Twose | Gray Interfaces                         | Gray Interfaces                   | A             | P                 |
| Trevor Forrest        | Helvar Lighting Control                 | Helvar Lighting Control           | P             | P                 |
| Lary Cotten           | High End Systems                        | High End Systems                  | P             | P                 |
| Scott Blair           | High End Systems                        | High End Systems                  | A             | P                 |
| Steve Carlson         | High Speed Design, Inc.                 | High Speed Design, Inc.           | P             | P                 |
| Edwin S. Kramer       | IATSE, Local 1                          | I.A.T.S.E. Local 1                | P             | U                 |
| John Huntington       | IATSE Local 1                           | IATSE Local 1                     | A             | U                 |

|                        |                                   |                                   |                   |   |
|------------------------|-----------------------------------|-----------------------------------|-------------------|---|
| Edward Paget           | Jones & Phillips Associates, Inc. | Jones & Phillips Associates, Inc. | P                 | G |
| Rick Leinen            | NSI Corporation                   | Leviton Manufacturing Co., Inc.   | P                 | P |
| Ken Vannice            | NSI Corporation                   | Leviton Manufacturing Co., Inc.   | A                 | P |
| Tim Cox                | PLASA                             | PLASA                             | P                 | G |
| Tony Douglas-Beveridge | PLASA Standards Office            | PLASA                             | A                 | G |
| Steve Terry            | PRG Lighting Division             | PRG                               | P                 | U |
| George Sabbi           | PRG Lighting Group                | PRG                               | A                 | U |
| George Kindler         | Thoughtful Designs                | PRG                               | A                 | U |
| Robert Barbagallo      | Proximo Inc.                      | Proximo Inc.                      | P                 | U |
| Paul F. Mardon         | Pulsar Ltd.                       | Pulsar Ltd.                       | P                 | P |
| Steve Unwin            | Pulsar Ltd.                       | Pulsar Ltd.                       | A                 | P |
| Jon R. Farley          | Rosco/Entertainment Technology    | Rosco Laboratories                | P                 | P |
| Richard Lawrence       | Strand Lighting Ltd.              | Strand Lighting Ltd.              | P                 | P |
| Milton Davis           | Strand Lighting                   | Strand Lighting Ltd.              | A                 | P |
| Jerry Gorrell          | Theatre Safety Programs           | Theatre Safety Programs           | P                 | G |
| Brian Dowd             | TMB Associates (NJ)               | TMB Associates                    | P                 | U |
| Mitch Hefter           | Rosco/Entertainment Technology    | USITT                             | P                 | U |
| Eckart Steffens        | SOUNDLIGHT                        | VPLT                              | P                 | G |
| John Sondericker III   | Wybron, Inc.                      | Wybron, Inc.                      | P                 | P |
| Keny Whitright         | Wybron, Inc.                      | Wybron, Inc.                      | A                 | P |
| Richard Thornton Brown | Zero 88 Ltd.                      | Zero 88 Ltd.                      | P                 | P |
| Peter Brooks           | Zero 88 Ltd.                      | Zero 88 Ltd.                      | A                 | P |
|                        |                                   |                                   | 32 voting members |   |

### 3 Approval of the minutes from the previous meeting (CP/2000-1007)

Ted Paget noted that the section numbering is wrong and that "EIA" should appear before "485" at the end of page 4. Paget moved that the minutes be accepted with the correction of the numbering and the addition of "EIA " before "485" at the end of page 4. The motion was seconded by Mitch Hefter. The motion was unanimously accepted with a show of hands.

### 4 Call for patents

Carlson read the call for patents:

"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."

Vannice noted the existence of the new NSI patent, #6020825. Vannice stated that he believed that NSI/Colortran did not plan to change it's policy in regard to this patent. Carlson asked for a letter from NSI/Colortran stating this policy.

Steve Carlson then read the anti-trust policy statement:

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this Working Group will reject or nullify any actions that restrain trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the 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 any member of this working group may be found individually liable for any action that restrains trade taken by this working group. An individual convicted of a violation of the Sherman Act may be fined as much as \$100,000

and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee."

No issues were identified.

## **5 Approval of agenda**

Paget moved that the draft agenda be accepted. The motion was seconded. The motion carried by acclamation.

## **6 Old Business**

### **6.1 E1.3 in public review.**

Ruling reported that E1.3 is in public review, and will be until September 12.

### **6.2 E1.11**

#### **6.2.1 Report on Proposals for Revisions to USITT DMX512/1990, Version 4 CP/98-1021r4**

#### **6.2.2 Executive Summary CP/2000-1009 — Report on Proposals for Revisions to USITT DMX512/1990 (CP/98-1021r4)**

Hefter moved that the two reports (the report on proposals and the report summarizing the report on proposals) be published on the ESTA and USITT websites. The motion was seconded.

There was a discussion that focused on the possibility of confusing people with these two historical documents. The group felt that there was a need to balance the need to be open with the need to not confuse or slow the process of drafting the new standard.

The motion was decided by a show of hands: 17 in favor; two against; Chair abstained.

Ted Paget moved that the publishing shall be done in an "archival section" of the website and that each page shall have a watermark, or equivalent, saying that it is an archival document. The motion was seconded. By show of hands, the motion carried with 19 in favor, and none against (Chair abstained).

#### **6.2.3 Task Group progress report**

Mitch Hefter reported that a new document was sent to the task group and made available on the web to the working group. A few have commented. The goal is to have a document ready to be voted for public review by the January 2001 working group meeting.

#### **6.2.4 IEC update**

Hefter reported that nothing's happening. The IEC committee is waiting for this working group to get to the point of having a public review document.

## **6.3 Publishing DMX on Cat 5 report**

Neither Higgins nor Twose were present a report.

Karl Ruling pointed out some problems with moving forward with the publishing project:

- a) Ruling does not have a copy of the document with the referenced tables.
- b) It was not clear that the copy of the document that Ruling has is a proper response to the charge given the task group by the working group Chairs at the March 23rd meeting.
- c) The DMX-CAT5 Report.PDF Ruling has is dated March 2000, and it is not clear that this is the most recent document

Jerry Gorrell moved that the document be sent back to the task group to be rewritten as a technical report simply stating the performance of CAT 5 cable with the test conditions. The motion was seconded. After some discussion, the motion was withdrawn.

Ted Paget volunteered to edit the final report.

No action was taken.

#### **6.4 Report on IEEE 802.3 DTE Power via MDI project & other IEEE matters**

Carlson reported that the project is now called 802.3af. Whether to put power on the signal pairs (as is being done by Cisco Systems) or to put power on the idle pairs has been the question, and the question had halted all forward motion. Carlson proposed abandoning the project because the group was unable to make progress. That broke the wall, and the group proposed to support both methods of providing power. The committee now has a 1.0 draft of the standard that's pretty sketchy. There are several detection methods being developed.

#### **6.5 Report of ACN Task Group and ACN Tutorial**

Carlson reported that the task group is still working on the presentation. The working group will recess after the schedule for future meetings until 1:00 for the presentation.

#### **7 New Business**

None.

#### **8 Other business**

Ted Paget and Steve Carlson modeled some ESTA clothing and urged people to support the TSC by buying TSC and ESTA-branded garments.

#### **9 Schedule for future meetings**

Carlson announced that the meeting at LDI is scheduled for Thursday from 9:00 to 6:00 at Harrah's Las Vegas. The DMX task group have a break-out session that afternoon.

#### **10 Recess**

Carlson recessed the meeting at about 10:30 a.m.

#### **11 ACN tutorial**

Carlson reconvened the working group meeting at 1:00 p.m. and the ACN tutorial was given by the members of the ACN task group. The presentation described the architecture of the control networking protocol, including the Session Data Transport (SDT), which is a means of doing reliable multi-casting in minimal bandwidth; the Device Management Protocol (DMP); Network Management Protocol (NMP); and the Device Description Language (DDL).

#### **12 More other business**

Charles Reese of Vari-Lite offered his application for membership at this time, applying as a principal, producer. Carlson asked those supporting this application to raise a hand. The application was accepted unanimously.

#### **13 Adjournment**

Ted Paget moved the meeting adjourn. Tim Bachman seconded. The motion was unanimously accepted by a voice vote. Carlson declared the meeting adjourned at 3:53 p.m.

## Control Protocol Working Group Membership after Changes of the 15 July 2000 Meeting

| Name                 | Company                     | Parent Co./Org Represented  | Vot. Stat. | Int. Cat. |
|----------------------|-----------------------------|-----------------------------|------------|-----------|
| John Sellers         | AIM Northwest               | AIM Northwest               | P          | G         |
| Tony de Rijk         | Amazing Controls! Inc.      | Amazing Controls! Inc.      | P          | P         |
| Peter Willis         | Andera Ltd.                 | Andera Ltd.                 | P          | P         |
| Wayne David Howell   | Artistic Licence (UK) Ltd.  | Artistic Licence (UK) Ltd.  | P          | P         |
| Steve Friedlander    | Auerbach & Associates, Inc. | Auerbach & Associates, Inc. | O          | U         |
| Sierk Janszen        | Avenger Showcontrol         | Avenger Showcontrol         | O          | P         |
| J. B. Toby           | Avolites Ltd.               | Avolites Ltd.               | O          | P         |
| Shahid Anwar         | Avolites Ltd.               | Avolites Ltd.               | O          | P         |
| Richard Salzedo      | Avolites Ltd.               | Avolites Ltd.               | O          | P         |
| Barbara Wohlsen      | Barbara Wohlsen             | Barbara Wohlsen             | O          | U         |
| Tim Bachman          | Barbizon Light              | Barbizon Companies          | P          | U         |
| Tobin Neis           | Barbizon Companies          | Barbizon Companies          | A          | U         |
| Bernardo Benito Rico | Ben-Ri Electronica S.A.     | Ben-Ri Electronica S.A.     | O          | P         |
| Lee J. Bloch         | Bloch Design Group Inc.     | Bloch Design Group Inc.     | P          | G         |
| Soo-Myong Chung      | Bloch Design Group Inc.     | Bloch Design Group Inc.     | A          | G         |
| Bradley Klinkrad     | Bradley Klinkrad            | Bradley Klinkrad            | O          | G         |
| Ted Fregon           | Bytecraft Pty. Ltd.         | Bytecraft Pty. Ltd.         | O          | P         |
| Murray Mason         | Bytecraft Pty. Ltd.         | Bytecraft Pty. Ltd.         | O          | P         |
| Bill Ellis           | Candela Controls, Inc.      | Candela Controls, Inc.      | O          | U         |

| Name             | Company                           | Parent Co./Org Represented        | Vot. Stat. | Int. Cat. |
|------------------|-----------------------------------|-----------------------------------|------------|-----------|
| Marty Lazarus    | Chicago Spotlight, Inc.           | Chicago Spotlight, Inc.           | O          | G         |
| David George     | Christie Lites Manufacturing Ltd  | Christie Lites Manufacturing Ltd  | P          | P         |
| Tal Miron        | Compulite R & D                   | Compulite R & D                   | O          | P         |
| Jason Friedman   | Creative Realities, Inc.          | Creative Realities, Inc.          | O          | G         |
| Mikael Fahl      | Dataton AB                        | Dataton AB                        | O          | P         |
| David Bertenshaw | David Bertenshaw                  | David Bertenshaw                  | O          | P         |
| Doug Fleenor     | Doug Fleenor Design, Inc.         | Doug Fleenor Design, Inc.         | P          | P         |
| Gary Dove        | Dove Systems                      | Dove Systems                      | O          | P         |
| Jussi Kallioinen | Eastway Sound & Lighting          | Eastway Sound & Lighting          | O          | U         |
| Ed Jones         | Edwin Jones Co.                   | Edwin Jones Co.                   | P          | P         |
| Bill Fehrmann    | Electrol Engineering, Inc.        | Electrol Engineering, Inc.        | O          | P         |
| Ed Prasser       | Electronic Theatre Controls, Inc. | Electronic Theatre Controls, Inc. | P          | P         |
| Bruce Lehnus     | Electronic Theatre Controls, Inc. | Electronic Theatre Controls, Inc. | O          | P         |
| Adam Bennette    | Electronic Theatre Controls Ltd.  | Electronic Theatre Controls, Inc. | O          | P         |
| Bill Florac      | Electronic Theatre Controls, Inc. | Electronic Theatre Controls, Inc. | O          | P         |
| Dennis Varian    | Electronic Theatre Controls, Inc. | Electronic Theatre Controls, Inc. | A          | P         |
| Jon Ide          | Electronic Theatre Controls, Inc. | Electronic Theatre Controls, Inc. | A          | P         |

| Name                  | Company                                 | Parent Co./Org Represented        | Vot. Stat. | Int. Cat. |
|-----------------------|---|-----------------------------------|------------|-----------|
| Greg Heinzle          | Electronic Theatre Controls, Inc.       | Electronic Theatre Controls, Inc. | A          | P         |
| Tracy Underhill       | Electronics Diversified Inc. (Colorado) | Electronics Diversified Inc.      | P          | P         |
| Paul Bennett          | Electronics Diversified Inc.            | Electronics Diversified Inc.      | O          | P         |
| Scott Rempel          | Electronics Diversified Inc.            | Electronics Diversified Inc.      | A          | P         |
| Philip Nye            | Engineering Arts                        | Engineering Arts                  | P          | G         |
| Paul K. Ericson       | Ericson Lighting Design                 | Ericson Lighting Design           | O          | U         |
| Robert Goddard        | Goddard Design Co.                      | Goddard Design Co.                | P          | P         |
| Dexter McNeil         | Goddard Design Co.                      | Goddard Design Co.                | A          | P         |
| Dave Higgins          | Gray Interfaces                         | Gray Interfaces                   | P          | P         |
| Michael (Sandy) Twose | Gray Interfaces                         | Gray Interfaces                   | A          | P         |
| Trevor Forrest        | Helvar Lighting Control                 | Helvar Lighting Control           | P          | P         |
| Lary Cotten           | High End Systems                        | High End Systems                  | P          | P         |
| Scott Blair           | High End Systems                        | High End Systems                  | A          | P         |
| Steve Carlson         | High Speed Design, Inc.                 | High Speed Design, Inc.           | P          | P         |
| Edwin S. Kramer       | IATSE, Local 1                          | I.A.T.S.E. Local 1                | P          | U         |
| Roger Lattin          | IATSE Local 728                         | I.A.T.S.E. Local 728              | O          | U         |
| John Huntington       | IATSE Local 1                           | IATSE Local 1                     | A          | U         |
| Rob Johnston          | Interactive Technologies, Inc.          | Interactive Technologies, Inc.    | O          | P         |

| Name                 | Company                           | Parent Co./Org Represented        | Vot. Stat. | Int. Cat. |
|----------------------|-----------------------------------|-----------------------------------|------------|-----------|
| Larry Schoeneman     | Interesting Products, Inc.        | Interesting Products, Inc.        | O          | G         |
| David Timmins        | Jands Electronics                 | Jands Electronics                 | O          | P         |
| Edward Paget         | Jones & Phillips Associates, Inc. | Jones & Phillips Associates, Inc. | P          | G         |
| Merlin Milner        | Leax Lighting Controls            | Leax Lighting Controls            | O          | P         |
| John Mehlretter      | Lehigh Electric Products Co.      | Lehigh Electric Products Co.      | O          | P         |
| Mark T. Kraft        | Lehigh Electric Products Co.      | Lehigh Electric Products Co.      | O          | P         |
| Rick Leinen          | NSI Corporation                   | Leviton Manufacturing Co., Inc.   | P          | P         |
| Ken Vannice          | NSI Corporation                   | Leviton Manufacturing Co., Inc.   | A          | P         |
| Andrew Sherar        | Lightmoves PLC                    | Lightmoves PLC                    | O          | P         |
| Gary Pritchard       | LSC Lighting Systems PTY Ltd      | LSC Lighting Systems PTY Ltd      | O          | P         |
| JP Steiner           | Lutron Electronics                | Lutron Electronics                | O          | P         |
| Tracy Schwenk        | Martin Professional Inc.          | Martin Professional A/S           | O          | P         |
| Gerard Cohen         | Martin Professional Inc.          | Martin Professional A/S           | O          | P         |
| Hiroshi Kita         | Marumo Electric Co., Ltd.         | Marumo Electric Co., Ltd.         | O          | P         |
| Geoffrey O. Thompson | IEEE 802.3 / Nortel Networks      | Nortel Networks                   | O          | G         |
| David A. Boller      | Organic Machines LLC              | Organic Machines LLC              | O          | P         |
| William Benner       | Pangolin Laser Systems            | Pangolin Laser Systems            | O          | P         |

| Name                   | Company                        | Parent Co./Org Represented   | Vot. Stat. | Int. Cat. |
|------------------------|--------------------------------|------------------------------|------------|-----------|
| Tim Cox                | PLASA                          | PLASA                        | P          | G         |
| Tony Douglas-Beveridge | PLASA Standards Office         | PLASA                        | A          | G         |
| Mac Perkins            | PNTA                           | PNTA Inc.                    | O          | G         |
| Steve Terry            | PRG Lighting Division          | PRG                          | P          | U         |
| George Sabbi           | PRG Lighting Group             | PRG                          | A          | U         |
| George Kindler         | Thoughtful Designs             | PRG                          | A          | U         |
| Robert Barbagallo      | Proximo Inc.                   | Proximo Inc.                 | P          | U         |
| Paul F. Mardon         | Pulsar Ltd.                    | Pulsar Ltd.                  | P          | P         |
| Steve Unwin            | Pulsar Ltd.                    | Pulsar Ltd.                  | A          | P         |
| Stephen J. Tyrrell     | Quantum Logic                  | Quantum Logic                | O          | P         |
| Charlie Richmond       | Richmond Sound Design Ltd.     | Richmond Sound Design Ltd.   | O          | P         |
| Jon R. Farley          | Rosco/Entertainment Technology | Rosco Laboratories           | P          | P         |
| Mick Martin            | Showcad Control Systems        | Showcad Control Systems      | O          | P         |
| Andre Broucke          | ADB - TTV Technologies         | Siemens                      | O          | P         |
| Ujall Kar              | Standard Robotics & Lighting   | Standard Robotics & Lighting | O          | G         |
| Richard Lawrence       | Strand Lighting Ltd.           | Strand Lighting Ltd.         | P          | P         |
| Milton Davis           | Strand Lighting                | Strand Lighting Ltd.         | A          | P         |
| Tad Trylski            | Tad Trylski                    | Tad Trylski                  | O          | U         |
| Jerry Gorrell          | Theatre Safety Programs        | Theatre Safety Programs      | P          | G         |

| Name                   | Company                        | Parent Co./Org Represented | Vot. Stat. | Int. Cat. |
|------------------------|--------------------------------|----------------------------|------------|-----------|
| Thom Weaver            | Thom Weaver                    | Thom Weaver                | O          | G         |
| Brian Dowd             | TMB Associates (NJ)            | TMB Associates             | P          | U         |
| Colin Waters           | TMB Associates                 | TMB Associates             | O          | U         |
| Achim Russ             | Transtechnik GmbH              | Transtechnik GmbH          | O          | P         |
| Hans Leiter            | Transtechnik GmbH              | Transtechnik GmbH          | O          | P         |
| Anders Ekvall          | Transtechnik GmbH              | Transtechnik GmbH          | O          | P         |
| Mitch Hefter           | Rosco/Entertainment Technology | USITT                      | P          | U         |
| Charles Reese          | Vari-Lite, Inc.                | Vari-Lite                  | P          | P         |
| Eckart Steffens        | SOUNDLIGHT                     | VPLT                       | P          | G         |
| Ken Wagner             | Walt Disney Imagineering       | Walt Disney                | O          | U         |
| John Sondericker III   | Wybron, Inc.                   | Wybron, Inc.               | P          | P         |
| Keny Whitright         | Wybron, Inc.                   | Wybron, Inc.               | A          | P         |
| Richard Thornton Brown | Zero 88 Ltd.                   | Zero 88 Ltd.               | P          | P         |
| Peter Brooks           | Zero 88 Ltd.                   | Zero 88 Ltd.               | A          | P         |

#### Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer, non-voting

#### Interest Categories

- P Producer (manufacturer) of control devices or products
- U User of control devices or products
- G General interest in control devices or products