

Minutes
Control Protocols Working Group
Thursday, March 25, 1999
Royal York Hotel
Toronto, Ontario

Chairs: Steve Carlson; Rosco/Entertainment Technology; Principal; Producer
Steve Terry; PRG/Production Arts; Principal; User

Recording secretary: Karl G. Ruling, ESTA

Members attending: John Sellers; AIM Northwest; Principal; General Interest
Peter Willis; Andera Ltd.; Principal; Producer
Tobin Neis; Barbizon Companies; Alternate; User
Lee J. Bloch; Bloch Design Group Inc.; Principal; General Interest
Tal Miron; Compulite R & D; Observer; Producer
Doug Fleenor; Doug Fleenor Design, Inc.; Principal; Producer
Ed Jones; Edwin Jones Co.; Principal; Producer
Jon Ide; Electronic Theatre Controls, Inc.; Alternate; Producer
Greg Heinze; Electronic Theatre Controls, Inc.; Alternate; Producer
Tracy Underhill; Electronics Diversified Inc. (Colorado); Principal; Producer
Philip Nye; Engineering Arts; Principal; General Interest
Robert Goddard; Goddard Design Co.; Principal; Producer
Dexter McNeil; Goddard Design Co.; Alternate; Producer
Dave Higgins; Gray Interfaces; Principal; Producer
Michael (Sandy) Twose; Gray Interfaces; Alternate; Producer
Lary Cotten; High End Systems; Principal; Producer
Edwin S. Kramer; IATSE, Local 1; Principal; User
John Huntington; John Huntington; Observer; User
Edward Paget; Jones & Phillips Associates, Inc.; Principal; General Interest
Ken Vannice; NSI Corporation; Alternate; Producer (joined at this meeting)
Tim Cox; PLASA; Principal; General Interest
George Kindler; PRG/Thoughtful Designs; Alternate; User
Robert Barbagallo; Proximo Inc.; Principal; User (joined at this meeting)
Steve Unwin; Pulsar Ltd.; Alternate; Producer
Milton Davis; Strand Lighting; Alternate; Producer
Richard Lawrence; Strand Lighting Ltd.; Principal; Producer
Brian Dowd; TMB Associates (NJ); Principal; User
Mitch Hefter; USITT (Rosco/Entertainment Technology); Principal; User
John Sondericker III; Wybron, Inc.; Principal; Producer
Peter Brooks; Zero 88 Ltd.; Principal; Producer

Visitors: Roger L. Lattin; IATSE Local 728
Jeff Berryman; Jason Sound Industries (A Westsun Company)
Lynn Kennedy; ESTA [Protocol](#)

1 Opening Remarks

Steve Carlson and Steve Terry called the meeting to order at 9:04 a.m.

2 Attendance and membership

2.1 Introductions of those present

The assembled multitude introduced themselves, proceeding around the table in a counter-clockwise direction.

2.2 Determination of quorum (11 needed)

Steve Carlson announced the presence of a quorum.

2.3 Recognition of alternate voting members

Tracy Underhill, EDI; Tobin Neis, Barbizon; and Steve Unwin, Pulsar, were all recognized as standing in for their principals.

2.4 Requirements for membership

Carlson reminded the working group that membership is open to all with a material interest in the work of the group. He reminded them that attendance was required for voting members. Failure of a principal and his/her alternates to attend three meetings in a row would result in a change of voting status to observer.

2.5 Processing of new membership requests

The following people applied as members or to change their membership status:

William Benner of Pangolin applied as an observer

Paul Vincent of Vincent Lighting Systems applied to be an observer

Bob Barbagallo of Proximo applied to be a principal for Proximo. (Change of company affiliation.)

Tracy Underhill of EDI applied to be the principal for that company. (Change of voting status. The previous principal had left the company.)

Ken Vannice applied as an alternate for NSI.

Carlson asked the working group if they approved of accepting these new members and membership status changes. There was a unanimous show of hands in support.

3 Approval of the minutes from the previous meeting

Bob Goddard stated that he and others feel there are mistakes in the recording of the resolutions on E1.3. Steve Unwin said that the following resolutions should read as recorded below:

"Number 27: Reject. The standard is written for up to 5 receivers on the line ($100K/5=20K$), if more receivers (or powered down desks) are put onto the line, the system will still work, (full brightness MAY not be achieved, depending on the output impedance of the driving console), we felt it was NOT necessary to get bogged down in any overloading parameters. The standard sets its limits, a user cannot expect a system to work to the standard outside these limits (we think covers 99% of all cases).

"Number 28: Reject. We know that System designers should follow applicable building regulations and good wiring practices, we cannot however, force them to do so. This is the only case where we felt a "should" should remain.

"Number 29: Reject. Maximum return signal current is tiny in comparison to PSU current in the common conductor (see number 19's explanation above). Also maximum current per channel (into a 5 receiver load - 20K) is 0.5mA.

"Number 30: Reject. The suggestion is no longer applicable because the table will be removed.

"Number 31: Reject. The suggestion is no longer applicable because the table will be removed.

"Number 32: Reject. The common conductor cable current could be anything if the desk is powered from the pack, so cable length tables and formulas cannot be stated, unless the PSU current is measured or assumed.

"Number 33: Accept in part. The suggestion to replace "dimers used" with "receivers connected" we accept. 0.1V is correct so we rejected the rest of the proposal.

"Number 34: Accept in principle. The limit is set to 30 volts peak. This allows for receivers with split +/- 15V rails on the input connectors."

Ted Paget moved that the minutes be accepted with the above amendments. Eddie Kramer seconded. Unanimous by show of hands.

4 Call for patents

Steve Carlson directed the working group to read the following call for patents and anti-trust statement, which were printed in the agenda and are reprinted below:

"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."

Tim Cox said he gets calls from PLASA members concerned with the Vari-Lite patents and the use of DMX. Cox asked if the working group has an opinion on this. Steve Terry pointed out that we do not do patent searches and such questions should be directed to a company's patent attorney. Carlson said we do a process of open patent disclosure. We ask in the public reviews that reviewers identify any protected intellectual property. We do not believe our standards contain protected intellectual property, but we do not warrant that they do not.

"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."

5 Approval of agenda

Carlson ask that some matters be added to new business, and that new business be dealt with before old business. These matters are in regard to some administrative issues to report from the TSC meeting, and reports from visitors Jeff Berryman and Lynn Kennedy.

Ted Paget moved the agenda be accepted with these changes. The motion was seconded. Unanimous by show of hands.

6 New Business

- 6.1 Steve Carlson advised the group not to take draft documents and circulate them to people outside the group. This information is not to be published. The standards-making process is short-circuited if you do this. The standards will get their best review when they go to public review if there is little advance public notice of any issues in the standards. If there is little or no advance debate in the public arena, a standard going to public review will be looked at by reviewers as a whole, which is what we want.
- 6.2 Carlson introduced Lynn Kennedy, the editor of *Protocol*. Carlson said that Kennedy is in search of authors, and that working group members are invited to write about what they know, but NOT about what goes on in the group.
- 6.3 Jeff Berryman was introduced and gave a report on AES24.

Berryman said that AES24 has a long history. The dream was a universal plug and play control protocol, and it was undertaken seven or eight years ago. This has finally resulted in the publication of the first 45% of the standard in AES24 Part 1. The rest is in Part 2, which is in draft. The standard does not address transport layers, which are layers 4 and below.

The standard is in controversy. The controversy is about the time it has taken to get it done. Part 2 is more than a 100 hours away from completion. It is now published in an incomplete draft form, however because it is believed that in its incomplete form it might be useful to the industry.

Berryman said he can't commit to when AES24 will be finished. The interest in the industry is on the wane. The industry now has a number of proprietary solutions, so the interest in universal protocol now has a low to medium profile in the industry. A viable part 2 will eventually be published, but by that time the deployment of proprietary standards may be so wide that it may take quite a while for it to be adopted in the market. Some companies and organizations are using SMNP stream. It has a lower level of functionality than AES24 was aiming for, but it has the attraction of being a lowest common denominator protocol. Berryman says he thinks the object class trees of part 2 may still be widely useful. Part 2 describes a whole class tree of audio devices.

Jon Ide asked if the lesson was that they missed their window. Berryman responded that he doubts that AES24 ever would have had universal acceptance because of the various market demands.

Berryman explained the slow progress by saying that the whole thing was done on bootleg resources, and that there were too many people involved. The AES is a volunteer professional organization, without clearly defined commercial forces to drive the process. These are the reasons why it took so long and still isn't done.

Berryman explained that there is a process -- if the standard is ever approved -- for extending the class tree. There has to be an extensibility process built into any universal protocol. He said that he didn't know what ACN was going to do about making the class tree in it extensible.

Carlson responded that extensibility is being built into ACN. Ide said ACN has backed off from the class tree model.

7 Old Business

7.1 E1.3 report

Ruling reported that the document needs to be revised and forwarded to the task group. Doug Fleenor said he can't do it. He asked that Steve Unwin or Bob Goddard become the task group chair head and do it.

It was agreed that Steve Unwin and Bob Goddard would take over shepherding E1.3. Unwin will make the necessary changes to the document to incorporate the resolutions agreed upon at the last meeting, and affirmed at this one. Bob Goddard will serve as a second pair of eyes to check the work.

7.2 E1.11

7.2.1 Task group update

Mitch Hefter gave an update on USITT's transactions with DIN. USITT is still waiting for DIN to respond to the cease-and-desist letter from USITT's German legal counsel.

Hefter reported that on the 23rd the task group resolved proposal 13. Hefter had not yet found out how far the group got on other matters.

Bob Goddard reported that the task group had fleshed out some table versions for requirements, and done a series of topology drawings. The group also did a series of drawings detailing specifically disallowed topologies.

The working group then had a discussion of whether to have a discussion on the open items or to discuss Type 5. [Type 5 is a proposed connector standard in the ROP that would allow up to +25Vdc on pins 4 and 5.]

Terry pointed out that the working group had rejected allowing non-EIA-485 voltage levels on any pins of the DMX connector at the January 1998 meeting, and questioned why this was being considered again. Willis defended considering it again, pointing out that this was a proposal submitted in response to the call for proposals released last year. In the task group the typing scheme, including Type 5, has been decided on. Richard Lawrence said the vote in January 1998 was in regard to USITT DMX512/1990, and was not a vote that applied to all future standards.

There was a discussion of backward compatibility in regard to Type 5. George Kindler asked about the importance of backward compatibility. Goddard said that backward compatibility was an important consideration, but that it was not the only consideration in accepting or rejecting a proposal, since legacy equipment was not completely compatible with the existing standard.

John Sondericker pointed out that there was a difference between incompatibility and damage to equipment. Several participants in the discussion at various times made this point, so there was general agreement that this was true.

Eddie cited the problems with relying on markings in the field, which are the main protection in the typing scheme to keep new equipment from being plugged into incompatible older equipment. Markings get covered, markings get omitted, and cables in bundles get swapped. The result of any of these situations could be Type 5 equipment being plugged into non-Type 5 equipment.

Steve Carlson spoke against allowing a Type 5 because it will make interoperability in the market even worse than it is today.

Philip Nye raised the issue of the 6-pin connector, and Peter Brooks spoke about this, too. Both expressed frustration that the connector had been rejected at the January 1998 meeting. They felt there is a need for interpluggable connectors that offer power, and that connector seemed to offer it. Mitch Hefter pointed out that the concept of the 6-Pin connector or any other connector was not proposed during the Call for Proposed Changes to DMX512 later in 1998.

Tim Cox moved that the task group be directed to have the ROP finished by April 30 and to incorporate the proposals in a draft standard to be circulated to the working group by the 31st of May, in good time for the July meeting. Ted Paget seconded. By show of hands: 12 in favor, 9 opposed. Motion carried.

Bob Goddard moved that the working group provide discussion and guidance to the task group in this meeting on inclusion of signals that are not strictly EIA-485 compliant. Eddie Kramer seconded. By show of hands: 24 in favor, none opposed. Motion carried.

John Sondericker moved that whatever the task group considers that no voltages specified in the draft standard shall be allowed to exceed the voltage limits of EIA-485. Ted Paget second.

At the request of Bob Goddard John Sondericker withdrew the motion. The working group went into an informal task group style discussion.

John Sondericker moved that the working group shall direct the task group to consider power arrangements for Type 5 equipment that will cause no harm to all other devices. Ted Paget second. By show of hands: 22 in favor, 2 opposed. Motion carried.

Carlson declared that the working group shall recess for lunch and reconvene at 1:45. The meeting recessed at 12:45.

After the meeting reconvened, John Sondericker moved that his previous motion be amended by adding "only" and "if considering power issues." This was seconded. The motion thus became that the working group shall direct the task group that if considering power issues, to consider only power arrangements for Type 5 equipment that will cause no harm to all other devices. By show of hands: 16 in favor, 4 opposed. Motion carried.

7.2.2 IEC update

Ruling reported that on March 22 Mike Stein had sent a new work proposal to make DMX512 an IEC standard to the Secretary of the US National Committee with the note to submit the proposal to the IEC central office for submittal to the national committees of TC34. TC34 is expecting a working draft of the standard from the CPWG in July.

Ruling reported that Stein requested a suggested panel of experts and a project leader. Ruling reported he had submitted the following list:

Project leader: Mitch Hefter

Panel of experts:

Canada	Dave Higgins	USA	Tim Bachman
Germany	Eckart Steffens		Steve Carlson
UK	Tim Cox		Milton Davis
	Tony Douglas-Beveridge		Doug Fleenor
	Wayne Howell		Bob Goddard
	Paul Mardon		Ted Paget
	Steve Unwin		Steve Terry
	Peter Willis		

7.3 Report of ACN Task Group (Carlson)

Carlson reported that the ACN Task Group met in Irving, Texas in January. The meeting was complicated by the snowstorm in Wisconsin, which had kept the ETC contingent on the ground there. Richard Lawrence gave a good presentation on device management protocols at that meeting. The group also discussed Sun's JINI, a plug-and-play networking technology. The Task Group was given the task of reading the JINI documentation. The group has also been in contact with Sun, which is willing to send people to other meetings. Dallas Semiconductor is working on JINI chips, reported Carlson.

The group is not looking at Microsoft's "Home Plug and Play."

8 Other business

Carlson announced the formation of the Electrical Power Working Group. It has two chairs: Bob Luther of Lex Products and Ken Vannice of NSI/Colortran. Bob will look at physical distribution issues; Ken will focus on power quality harmonics issues.

Peter Brooks said those in the EU live in a regulatory environment in which the regulations are put in first and then imposed on them who must live with it. Brooks stated that we are all being treated badly by the regulators.

9 Schedule for future meetings

The next meeting will be Saturday, July 17 in Irving, Texas at the Dallas/Ft. Worth Marriott Hotel. The next meeting after that will be at LDI, Thursday, November 18th in Orlando, FL.

10 Adjournment

Ted Paget moved the meeting adjourn. Mitch Hefter seconded. Affirmation by acclamation.

Working Group Membership as of the End of the March 25, 1999 Meeting

Name	Company	Vote Stat.	Int Cat
Andre Broucke	ADB - TTV Technologies	O	P
John Sellers	AIM Northwest	P	G
Tony de Rijk	Amazing Controls! Inc.	P	P
Peter Willis	Andera Ltd.	P	P
Wayne David Howell	Artistic Licence (UK) Ltd.	P	P
Steve Friedlander	Auerbach & Associates, Inc.	O	U
Sierk Janszen	Avenger Showcontrol	O	P
J. B. Toby	Avolites Ltd.	O	P
Shahid Anwar	Avolites Ltd.	O	P
Richard Salzedo	Avolites Ltd.	O	P
Tobin Neis	Barbizon Companies	A	U
Tim Bachman	Barbizon Light	P	U
Lee J. Bloch	Bloch Design Group Inc.	P	G
Ted Fregon	Bytecraft Pty. Ltd.	O	P
Murray Mason	Bytecraft Pty. Ltd.	O	P
Marty Lazarus	Chicago Spotlight, Inc.	O	G
Tal Miron	Compulite R & D	O	P
Fred Lindauer	Compulite R&D	O	P
Jason Friedman	Creative Realities, Inc.	O	G
Mikael Fahl	Dataton AB	O	P
David Bertenshaw	David Bertenshaw	O	P
Doug Fleenor	Doug Fleenor Design, Inc.	P	P

Name	Company	Vote Stat.	Int Cat
Gary Dove	Dove Systems	O	P
Ed Jones	Edwin Jones Co.	P	P
Bill Fehrmann	Electrol Engineering, Inc.	O	P
Bruce Lehnus	Electronic Theatre Controls, Inc.	O	P
Ed Prasser	Electronic Theatre Controls, Inc.	P	P
Bill Florac	Electronic Theatre Controls, Inc.	O	P
Dennis Varian	Electronic Theatre Controls, Inc.	A	P
Jon Ide	Electronic Theatre Controls, Inc.	A	P
Greg Heinze	Electronic Theatre Controls, Inc.	A	P
Adam Bennette	Electronic Theatre Controls Ltd.	O	P
Paul Bennett	Electronics Diversified Inc.	O	P
Scott Rempel	Electronics Diversified Inc.	A	P
Tracy Underhill	Electronics Diversified Inc. (Colorado)	P	P
Philip Nye	Engineering Arts	P	G
Paul K. Ericson	Ericson Lighting Design	O	U
Nick Archdale	Flying Pig Systems Ltd. (UK)	A	P
Tom Thorne	Flying Pig Systems Ltd. (UK)	O	P
Nils Thorjussen	Flying Pig Systems Ltd. (US)	P	P
Robert Goddard	Goddard Design Co.	P	P
Dexter McNeil	Goddard Design Co.	A	P
Dave Higgins	Gray Interfaces	P	P
Michael (Sandy) Twose	Gray Interfaces	A	P

Name	Company	Vote Stat.	Int Cat
Trevor Forrest	Helvar Lighting Control	P	P
Lary Cotten	High End Systems	P	P
Scott Blair	High End Systems	A	P
Edwin S. Kramer	IATSE, Local 1	P	U
Geoffrey O. Thompson	IEEE 802.3 / Nortel Networks	O	G
Larry Schoeneman	Interesting Products, Inc.	O	G
John Huntington	John Huntington	O	U
Edward Paget	Jones & Phillips Associates, Inc.	P	G
Philippe Jean	Kunst Macchina Production Company	O	P
Louis-Philippe Demers	Kunst Macchina Production Company	O	P
John Mehlretter	Lehigh Electric Products Co.	O	P
Mark T. Kraft	Lehigh Electric Products Co.	O	P
Andrew Sherar	Lightmoves PLC	O	P
Tracy Schwenk	Martin Professional Inc.	O	P
Gerard Cohen	Martin Professional Inc.	O	P
Rick Leinen	NSI Corporation	P	P
Ken Vannice	NSI Corporation	A	P
Tim Cox	PLASA	P	G
Tony Douglas-Beveridge	PLASA Standards Office	A	G

Name	Company	Vote Stat.	Int Cat
George Sabbi	PRG Lighting Division	A	U
Paul M. Kleissler	PRG/ Production Arts	O	U
Steve Terry	PRG/ Production Arts	P	U
George Kindler	PRG/Thoughtful Designs	A	U
Bill Ellis	PRG/Vanco Lighting Services	O	U
Robert Barbagallo	Proximo Inc.	P	U
Paul F. Mardon	Pulsar Ltd.	P	P
Steve Unwin	Pulsar Ltd.	A	P
Stephen J. Tyrrell	Quantum Logic	O	P
Charlie Richmond	Richmond Sound Design Ltd.	O	P
Steve Carlson	Rosco/Entertainment Technology	P	P
Mitch Hefter	Rosco/Entertainment Technology (USITT rep)	P	U
Mick Martin	Showcad Control Systems	O	P
Eckart Steffens	SOUNDLIGHT (VPLT)	P	G
Milton Davis	Strand Lighting	A	P
Richard Lawrence	Strand Lighting Ltd.	P	P
Jerry Gorrell	Theatre Safety Programs	P	G
Thom Weaver	Thom Weaver	O	G
Colin Waters	TMB Associates	O	U
Brian Dowd	TMB Associates (NJ)	P	U

Name	Company	Vote Stat.	Int Cat
Achim Russ	Transtechnik GmbH	O	P
Hans Leiter	Transtechnik GmbH	O	P
Anders Ekvall	Transtechnik GmbH	O	P
Paul Vincent	Vincent Lighting Systems	O	G
Ken Wagner	Walt Disney Imagineering	O	U
Keny Whitright	Wybron, Inc.	A	P
John Sondericker III	Wybron, Inc.	P	P
Peter Brooks	Zero 88 Ltd.	P	P
Richard Thornton Brown	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

Categories of interest

- P Producer (manufacturer) of control equipment
- U User of control equipment
- G General interest in control equipment