

Entertainment Services and
Technology Association



American National Standard
E1.30-10 - 2009
EPI 32
Identification of Draft Device
Description Language Modules

Part of the E1.30 suite of documents that offer application level equipment interoperability for control of commonly encountered entertainment technology devices using E1.17

[inside front cover]

Entertainment Services and
Technology Association



**American National Standard
E1.30-10-2009
EPI 32
Identification of Draft Device
Description Language Modules**

Part of the E1.30 suite of documents that offer application level equipment interoperability for control of commonly encountered entertainment technology devices using E1.17

CP/2008-1013r1

This document was approved as an American National Standard by the ANSI Board of Standards Review on 4 May 2009.

© 2009 The Entertainment Services and Technology Association. All rights reserved.

This page intentionally blank

Notice and Disclaimer

The Entertainment Services and Technology Association does not approve, inspect, or certify any installations, procedures, equipment or materials for compliance with codes, recommended practices or standards. Compliance with an ESTA standard or recommended practice, or an American National Standard developed by ESTA is the sole and exclusive responsibility of the manufacturer or provider and is entirely within their control and discretion. Any markings, identification or other claims of compliance do not constitute certification or approval of any type or nature whatsoever by ESTA.

ESTA neither guarantees nor warrants the accuracy or completeness of any information published herein and disclaim liability for any personal injury, property or other damage or injury of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this document.

In issuing and distributing this document, ESTA does not either (a) undertake to render professional or other services for or on behalf of any person or entity, or (b) undertake any duty to any person or entity with respect to this document or its contents. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance.

Published by:

Entertainment Services and Technology Association
875 Sixth Avenue, Suite 1005
New York, NY 10001 USA
Phone: 1-212-244-1505
Fax: 1-212-244-1502
standards@esta.org
<http://www.esta.org/>

For additional copies of this document contact:

ESTA Publications
The ESTA Foundation
875 Sixth Avenue, Suite 1005
New York, NY 10001 USA
Phone: 1-212-244-1505
Fax: 1-212-244-1502
<http://www.estafoundation.org>

The ESTA Technical Standards Program

The ESTA Technical Standards Program was created to serve the ESTA membership and the entertainment industry in technical standards related matters. The goal of the Program is to take a leading role regarding technology within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on behalf of our members, and improving communications and safety within the industry. ESTA works closely with the technical standards efforts of other organizations within our industry, including USITT, PLASA, and VPLT, as well as representing the interests of ESTA members to ANSI, UL, and the NFPA. The Technical Standards Program is accredited by the American National Standards Institute.

The Technical Standards Committee (TSC) was established by ESTA's Board of Directors to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards-making work from throughout our industry, the Committee approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Committee employs a Technical Standards Manager to coordinate the work of the Committee and its working groups as well as maintain a "Standards Watch" on behalf of members. Working groups include: Camera Cranes, Control Protocols, Electrical Power, Floors, Fog and Smoke, Followspot Position, Photometrics, and Rigging.

ESTA encourages active participation in the Technical Standards Program. There are several ways to become involved. If you would like to become a member of an existing working group, as have over two hundred people, you must complete an application which is available from the ESTA office. Your application is subject to approval by the working group and you will be required to actively participate in the work of the group. This includes responding to letter ballots and attending meetings. Membership in ESTA is not a requirement. You can also become involved by requesting that the TSC develop a standard or a recommended practice in an area of concern to you.

The Control Protocols Working Group, which authored this Standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. ESTA is committed to developing consensus-based standards and recommended practices in an open setting. Future Control Protocols Working Group projects will include updating this publication as changes in technology and experience warrant, as well as developing new standards and recommended practices for the benefit of the entertainment industry.

Contact Information

Entertainment Services and Technology Association

Karl G. Ruling
Technical Standards Manager
ESTA
875 Sixth Avenue, Suite 1005
New York, NY 10001
Phone: 1-212-244-1505
FAX: 1-212-244-1502
standards@esta.org

Technical Standards Committee Chairperson

Mike Garl
James Thomas Engineering, Inc.
10240 Caneel Drive
Knoxville, TN 37931
Phone: 1-865-692-3060
FAX: 1-865-692-9020
mikeg@jthomaseng.com

Control Protocols Working Group Chairpersons

Michael Lay
Strand Lighting
6603 Darin Way
Cypress, CA 90630
Phone: 1-714-230-8208
FAX: 1-714-899-0042
mlay@strandlight.com

Tracy Underhill
Electronics Diversified LLC
1675 NW Cornelius Pass Rd.
Hillsboro, OR 97124
Phone: 1-503-645-5533
FAX: 1-503-629-9877
tracy.underhill@edionline.com

Acknowledgments

The Control Protocols Working Group was the consensus body for the development of this Standard. The working group's membership at the time the working group approved this Standard on 31 December 2008 is listed below.

Voting members:

Daniel W. Antonuk; Electronic Theatre Controls, Inc. [MP]
Robert Armstrong; Pathway Connectivity Inc. [MP]
Robert Bell; Horizon Control Inc. [MP]
Scott M. Blair; High End Systems Inc. [MP]
Ron Bonner; PLASA [G]
John (Javid) D. Butler; Integrated Theatre, Inc. [CP]
Jean-Francois Canuel; Spectrum Manufacturing Inc. [CP]
Kimberly Corbett; Schuler Shook [G]
Stuart Cotts; Oregon Shakespeare Festival [U]
Milton Davis; Doug Fleenor Design, Inc. [MP]
Gary Douglas; Horizon Control Inc. [MP]
Doug Fleenor; Doug Fleenor Design, Inc. [MP]
Robert Goddard; Goddard Design Co. [MP]
Tom Grimes; High End Systems, Inc. [MP]
Dennis Grow; I.A.T.S.E. Local 728 [U]
Mitch Hefter; Entertainment Technology, representing USITT [U]
Dave Higgins; Pathway Connectivity Inc. [MP]
Simon Hobday; Artistic Licence (UK) Ltd. [CP]
John Huntington; City Tech, Ent Tech Department, representing I.A.T.S.E. Local 1 [U]
Edwin S. Kramer; I.A.T.S.E. Local 1 [U]
Ulrich Kunkel; E3 Engineering & Education for Entertainment, representing DIN [U]
Roger Lattin; I.A.T.S.E. Local 728 [U]
Hans Lau; Sand Network Systems, Inc. [MP]
Michael Lay; Strand Lighting [MP]
Rick Leinen; Leviton Manufacturing Co., Inc. [MP]
Kevin Loewen; Pathway Connectivity Inc. [MP]
Mark Manthei; Shure Inc. [G]
Alan Martello; Horizon Control Inc. [MP]
Tyrone Mellon Jr.; Lex Products Corp. [CP]
Philip Nye; Engineering Arts [G]
Edward A. (Ted) Paget; Vortek Rigging Division of Daktronics Inc. [G]
Charles Reese; Production Resource Group [DR]
Alan M. Rowe; IATSE Local 728 [U]
Yngve Sandboe; Sand Network Systems, Inc. [MP]
Arnold Tang; Arnold Tang Productions [U]
Steve Terry; Electronic Theatre Controls, Inc. [MP]
Robert Tooker; Production Resource Group [DR]
Tracy Underhill; Electronics Diversified LLC [MP]
Ken Vannice; Leviton Manufacturing Co., Inc. [MP]
Michael (Mike) Whetstone; Integrated Theatre, Inc. [CP]
Peter Willis; Howard Eaton Lighting Ltd. [CP]
Kehang Wu; Shure Inc. [G]

Observer members:

Simon Alpert; Lighttech Event Technologies [CP]
Klaus Amling; Licht-Technik; P
Shahid Anwar; Avolites Ltd. [MP]
Tim Bachman; A.C.T Lighting, Inc. [DR]

Robert Barbagallo; Solotech Inc. [U]
William Benner; Pangolin Laser Systems [MP]
Adam Bennette; Electronic Theatre Controls Ltd. [MP]
David Bertenshaw; David Bertenshaw [G]
Stephen Bickford; T. Kondos Associates [U]
Torrey Bievenour; Vision Quest Lighting [G]
Mike Blackwell; Philips/Color Kinetics [MP]
Lee J. Bloch; Bloch Design Group, Inc. [G]
David A. Boller; Organic Machines LLC [CP]
Andre Broucke; ADB - TTV Technologies [MP]
Steve Carlson; High Speed Design, Inc. [MP]
Soo-Myong Chung; Bloch Design Group, Inc. [G]
Paul J. Clark; HxDx [CP]
Edward R. Condit [G]
Eric Cornwell; West Side Systems [U]
Klas Dalbjorn; Labgruppen AB [MP]
Wayne David Howell; Artistic Licence (UK) Ltd. [CP]
Gary Dove; Dove Systems [MP]
Larry Dunn; City Theatrical, Inc. [CP]
Jerry Durand; Durand Interstellar, Inc. [CP]
James Eade; PLASA [G]
Joost van Eenbergen; ELC Lighting [MP]
Anders Ekvall; Transtechnik Lichtsysteme GmbH [MP]
Bill Ellis; Candela Controls, Inc. [U]
Paul K. Ericson; Syska Hennessy Group Lighting Design [U]
Jon R. Farley; Sixteenth Avenue Systems [CP]
Martin Farnik; Robe Show Lighting s.r.o. [MP]
Bill Fehrmann; Electrol Engineering, Inc. [MP]
Trevor Forrest; Helvar Lighting Control [MP]
Douglas Franz; QVC Network [U]
Steve Friedlander; Auerbach Pollock Friedlander [U]
Michael Gonzales; Spectrum Lighting Inc. [DR]
Jerry Gorrell; Theatre Safety Programs [G]
Josh Gubler [CP]
Sean Harding; Rhode Island College [U]
Bill Hewlett; Hewlett Electronics [CP]
Helge Hoffmann; JB Lighting [MP]
Jim Holladay; Luxence [G]
Sierk Janszen; Kiss Box [U]
Flemming Jensen; Martin Professional A/S [G]
Eric Johnson [MP]
Rob Johnston; Interactive Technologies, Inc. [MP]
Ed Jones; Edwin Jones Co., Inc. [CP]
Jussi Kallioinen; Eastway Sound & Lighting [U]
Ujjal Kar; Standard Robotics & Lighting [G]
Hiroshi Kita; Marumo Electric Co., Ltd. [MP]
Mark T. Kraft; Lehigh Electric Products Co. [MP]
Marty Lazarus; Chicago Spotlight, Inc. [G]
Hans Leiter; ETC GmbH [MP]
Paul F. Mardon; Pulsar Ltd. [MP]
Mick Martin; ShowCAD Control Systems [MP]
Paul Kenneth McEwan; Zero 88 Lighting Limited [MP]
John Mehlretter; Lehigh Electric Products Co. [MP]
Avraham Mendall Mor "Avi"; Lightswitch [U]
Tobin Neis; Barbizon Companies [DR]
Lars F. Paape; Scientific Algorithms and Embedded Systems [U]

Fabiano Pina; Clay Paky S.P.A. [MP]
Gary Pritchard; LSC Lighting Systems (Aust) PTY Ltd [MP]
Eric Proce [U]
Christopher Purpura; Jones & Phillips Associates, Inc. [G]
Torben Kaas Rasmussen; Martin Professional A/S [G]
Charlie Richmond; Richmond Sound Design Ltd. [CP]
Bernardo Benito Rico; Ben-Ri Electronica S.A. [MP]
Steve Roberts; Carr & Angier [G]
Erwin Rol; Erwin Rol Software Engineering [G]
Dietmar Rottinghaus; Connex GmbH [G]
Richard Salzedo; Avolites Ltd. [MP]
Larry Schoeneman; Designlab Chicago, Inc. [DR]
Chuck Seifried; Phoenix Civic Plaza [U]
John Sellers; AIM Northwest [G]
Andrew Sherar; Lightmoves PLC [MP]
Yehuda Shukram; Compulite Systems [MP]
John Sondericker III; Wybron, Inc. [MP]
Bart Swinnen; Luminex LCE [MP]
Geoffrey O. Thompson; Nortel Networks, Inc. [G]
David Timmins; Jands Electronics [MP]
J. B. Toby; Avolites Ltd. [MP]
Bob Toms; Catalyst Microsystems LLC [G]
Tad Trylski; Tad Trylski [U]
Stephen J. Tyrrell; Quantum Logic [MP]
Steve Unwin; Pulsar Ltd. [MP]
Dominic Vincenty; TPS [DR]
Will Wagner; Carallon Ltd. [MP]
John Warwick; Philips/Color Kinetics [MP]
Colin Waters; TMB [U]
Ralph Weber; ENDL Texas [G]
Daniel Weiermann; Mainstage Theatrical Supply - Milwaukee [DR]
Lars Wernlund; Lewlight [MP]
Loren Wilton; Showman Systems [CP]
Barbara Wohlsen [U]
Jiantong Wu; Beijing Special Engineering Design & Research Institute [G]

[CP] Custom-market Producer
[MP] Mass-market Producer
[DR] Dealer or Rental company
[U] User
[G] General Interest

Table of Contents

Notice and Disclaimer.....	i
Contact Information	iii
Acknowledgments	iv
Abstract.....	1
1 Introductory Discussion	1
2 Draft DDL Modules	2
2.1 DDL-draft URL	2
2.2 Controller Treatment of Draft Modules	2
3 Definitions	2
References	3
Normative.....	3
Informative	3

ACN EPIs

ANSI E1.17-2006 is the “ESTA Architecture for Control Networks” standard [ACN]. It specifies an architecture – including a suite of protocols and languages which may be configured and combined with other standard protocols in a number of ways to form flexible networked control systems.

E1.17 Profiles for Interoperability (EPIs) are standards documents which specify how conforming implementations are to operate in a particular environment or situation in order to guarantee interoperability. They may specify a single technique, set of parameters or requirement for the various ACN components. They may also specify how other standards (including other EPIs) either defined within ACN or externally are to be used to ensure interoperability.

Abstract

This EPI specifies how draft DDL modules which may change frequently may be marked and identified.

1 Introductory Discussion

Device Description Language [DDL] provides a rich framework for describing devices in terms of a structure of properties accessed by a controller.

Note

This EPI refers extensively to elements and constructions which are part of the DDL standard [DDL]. To understand this specification will require some knowledge of DDL and its terms.

A DDL module is defined within the DDL specification to be a behaviorset, languageset or device element and its contents (including attributes).

All DDL modules of whichever type carry three mandatory attributes: UUID, provider and date: UUID is a Universally Unique Identifier [UUID] which is uniquely assigned to this module to be used as an identifier for it; provider is a URL identifying the person or organization who is responsible for this module. The use of a URL allows flexible subdivision of large organizations or access to additional material associated with the description; date is the date of release of the module. In the case where multiple modules are

available for the same purpose (e.g. as marked by an alternatefor element), the date can assist a controller or user in selecting between multiple alternatives.

The DDL specification requires that multiple instances of a DDL module which have the same UUID must all have identical information content. Since DDL is an XML format, this allows changes to encoding and insignificant whitespace, but does not allow the values of elements or attributes to change. Whenever the information content is changed a new UUID must be assigned.

2 Draft DDL Modules

During development of DDL descriptions it is usual for them to go through frequent changes — often quite major. It is very difficult during this process to stick to the letter of the DDL requirement that any change to a description module requires assignment of a new UUID. It is therefore useful to be able to mark DDL descriptions as being experimental or in development. ESTA provides a special URL for this purpose — the DDL-draft URL.

2.1 DDL-draft URL

The DDL-draft URL may be used by anyone to mark DDL which is in a draft or experimental state and which may change with no change of UUID, provided that they comply with the requirements of this EPI.

The DDL-draft URL shall be: <http://www.esta.org/ddl/draft/>

Authors shall ensure for any draft DDL module, that the date attribute is updated with each changed version. The date field may include times (in accordance with [ISO-DATE]) as necessary to distinguish between successive drafts on the same day.

An organization shall not release equipment intended for commercial use containing DDL marked as draft in this way. Once the drafting process is complete and the DDL module ready for general release, the provider of that DDL shall substitute a suitable URL that they themselves own or control in the provider attribute and shall substitute the current date in the date attribute before release.

2.2 Controller Treatment of Draft Modules

A controller or other application encountering a module with the provider attribute set to the DDL-draft URL must be aware that this module is impermanent and may change between different instances, whether from different sources or from the same source at different times. It should therefore not cache such a module except for very short periods and should attempt to acquire revised copies whenever practicable.

3 Definitions

component: The process, program or application corresponding to a single ACN endpoint. All messages in ACN are sent and received by a component which is identified by a CID. See [Arch] for a more complete definition. See Also CID.

controller: The term controller is often used loosely to refer to any piece of equipment which controls or monitors other equipment via the network. However, in the context of DMP a controller is defined precisely in terms of the messages implemented, while in DDL context a controller is defined by its use of device descriptions. Other protocols or contexts may have their own definitions. See Also controller (DMP), controller (DDL).

controller (DMP): Within DMP a controller is any ACN component capable of retrieving and/or setting DMP properties in other components using DMP (including by subscribing to DMP events). This includes many pieces of equipment which might not be thought of as controllers by an end user.

controller (DDL): Within DDL a controller is a network entity that interprets the DDL descriptions of devices to know how to access or control them using the access protocol(s) of the Device Description to access each device.

device: The term device is often used loosely to refer to any piece of equipment on the network. However, in DDL a device is defined to be a specific DDL module type. In DMP a device is defined as any component which exposes properties accessible using DMP. Other protocols or contexts may have their own definitions. See Also device (DDL), device (DMP).

device (DMP): Within DMP, a device is that part of a component which exposes properties which may be examined or manipulated by a controller using DMP (a component may contain zero or one device). A device is always of a Device Class which has an associated DCID and device description.

device (DDL): Within DDL, a device is a DDL module describing an entity which may be monitored and controlled by means of a network or datalink. In DDL there is no distinction between a device and a sub-device except for the context in which they are encountered (device is a recursive term).

References

Normative

[ACN] Entertainment Services and Technology Association [<http://www.esta.org/tsp/>]. ANSI E1.17-2006. *Entertainment Technology - Architecture for Control Networks*. 2006-10-19.

[Arch] Entertainment Services and Technology Association [<http://www.esta.org/tsp/>]. ESTA TSP CP/2003-1007R4. *Entertainment Technology – Architecture for Control Networks. “ACN” Architecture*. 2006-10-19.

[DDL] Entertainment Services and Technology Association [<http://www.esta.org/tsp/>]. ESTA TSP CP/2003-1011R4. *Entertainment Technology - Architecture for Control Networks. Device Description Language*. 2006-10-19.

[UUID] Internet Engineering Task Force (IETF) [<http://ietf.org/>]. RFC 4122 [<http://ietf.org/rfc/rfc4122.txt>]. P. Leach, M. Mealling, and R. Salz. *A Universally Unique Identifier (UUID) URN Namespace*. July 2005.

[ISO-DATE] International Standards Organisation [<http://www.iso.org/>]. ISO 8601. *Data elements and interchange formats - Information interchange. Representation of dates and times*. 2000.

Informative

[DMP] Entertainment Services and Technology Association [<http://www.esta.org/tsp/>]. ESTA TSP CP/2003-1010R3. *Entertainment Technology - Architecture for Control Networks. Device Management Protocol*. 2006-10-19.