

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]

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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.

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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.

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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.