ANSI/CEA Standard

Web-based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)

ANSI/CEA-2014-B

January 2011

Approved American National Standard

ANSI

CEA

Consumer Electronics Association

www.CE.org

NOTICE

Consumer Electronics Association (CEA®) Standards, Bulletins and other technical publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards, Bulletins and other technical publications shall not in any respect preclude any member or nonmember of CEA from manufacturing or selling products not conforming to such Standards, Bulletins or other technical publications, nor shall the existence of such Standards, Bulletins and other technical publications preclude their voluntary use by those other than CEA members, whether the standard is to be used either domestically or internationally.

Standards, Bulletins and other technical publications are adopted by CEA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, CEA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard, Bulletin or other technical publication.

Note: The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the publisher.

This CEA Standard is considered to have International Standardization implication, but the International Electrotechnical Commission activity has not progressed to the point where a valid comparison between the CEA Standard and the IEC document can be made.
This Standard does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

(Formulated under the cognizance of the CEA **R7 Home Network Committee**.)

Published by
©CONSUMER ELECTRONICS ASSOCIATION 2011
Technology & Standards Department
www.CE.org

FOREWORD

The current version of this standard was developed under the auspices of the Consumer Electronics Association (CEA) R7 Home Network Committee.

Table of Contents

List of Figures

Web-based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)

1 Scope

The CEA-2014-B “Web-based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)” standard defines the necessary mechanisms to allow a user interface to be remotely displayed on and controlled by devices or control points other than the one hosting the logic.

The basic device operations are based on the UPnP Device Architecture for UPnP networks and UPnP devices in the home. The standard also allows the remote display of user interfaces provided by third party internet services on devices in the home, and covers a wide range of UI capabilities for TVs, mobile phones and portable devices.

This standard includes mechanisms intended to enable flow of content that might be under the control of a content protection system, such as a Digital Rights Management (DRM) system. In such cases certain capabilities defined by this standard may depend on proper, parallel implementation of the appropriate content protection system. Specification of content protection is beyond the scope of this standard.

Note that for CEA-2014-B, the requirements previously identified to remain compatible with CEA-2027-A are no longer required by this specification. These requirements have been identified with the term “obsolete”.

1.1 Purpose

The CEA-2014 protocol provides a structured way of accessing consumer electronics friendly XHTML (and related) content over an IP network.

The main goals of CEA-2014-A were based on the following principles:

a) Provide a mechanism that allows remote presentation and control of user interfaces directed to consumer devices.
b) Handle remote UI content that may reside either:
   - On UPnP UI server devices
   - On Internet-based services
c) Use existing web standards for UI content (e.g. XHTML)
   - Define extensions only when necessary
d) Support a variety of different consumer client devices
   - STBs, TVs, mobile phones
e) Allow for dynamic interaction between Remote UI Clients and Servers
   - Provide timely, partial UI updates from a Remote UI Server
f) Allow clients to receive important UI notifications from server devices at any time (if permitted by the user)
g) Allow for A/V functionality to be part of the UI experience