

# 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



**CEA**<sup>®</sup>  
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## **FOREWORD**

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

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# **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