

CEA Standard

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

CEA-2014-A

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

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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

This 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 v1.0 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 UPnP devices in the home, and covers a wide range of UI capabilities for TVs, mobile phones and portable devices. This standard attempts to specify solutions that are identical to the relevant parts of CEA-2027-A *A User Interface for Home Networks Using Web-based Protocols* in the common areas not specific to the underlying network, to enable the two standards to be similar to the fullest extent reasonable.

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 and any interaction between elements of this standard and any content protection system is beyond the scope of this standard.

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 are 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

Note that server devices that support CEA-2014 can also expose their functionality through other means in addition to Remote UI (such as through UPnP DCPs).

CEA Document Improvement Proposal

If in the review or use of this document, a potential change is made evident for safety, health or technical reasons, please email your reason/rationale for the recommended change to standards@ce.org.

Consumer Electronics Association
Technology & Standards Department
1919 S Eads Street, Arlington, VA 22202
FAX: (703) 907-7693 standards@CE.org

