ScreenDevice:2 Device

For UPnP Version 1.0
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1 Scope

This document defines a device type referred to as ScreenDevice version 2. This device specification is compliant with UPnP Device Architecture 1.0 [1].

ScreenDevice provides various interactive services with other display device(s) which is (are) implemented with Screen Control Point(s). It is designed to be controlled by and interact with Screen Control Point(s). See the Multi-Screen Architecture:1 [2] for details.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[1] – *UPnP Device Architecture, version 1.0*, UPnP Forum, October 15, 2008.
Available at: http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0-20081015.pdf.
Latest version available at: http://www.upnp.org/specs/arch/UPnP-arch-DeviceArchitecture-v1.0.pdf.

[2] – *Multi-Screen Architecture:1*, UPnP Forum, September 30, 2014.
Available at: http://www.upnp.org/specs/ms/UPnP-ms-MultiScreenArchitecture-v1-20140930.pdf.
Latest version available at: http://www.upnp.org/specs/ms/UPnP-ms-MultiScreenArchitecture-v1.pdf.

 [3] – *ApplicationManagement:2*, UPnP Forum, September 30, 2014.
Available at: http://www.upnp.org/specs/ms/UPnP-ms-ApplicationManagement-v2-Service-20140930.pdf.
Latest version available at: http://www.upnp.org/specs/ms/UPnP-ms-ApplicationManagement-v2-Service.pdf.

 [4] – *DeviceProtection:1*, UPnP Forum, December 31, 2010.
Available at: http://www.upnp.org/specs/gw/UPnP-gw-DeviceProtection-v1-Service-20110224.pdf.
Latest version available at: http://www.upnp.org/specs/gw/UPnP-gw-DeviceProtection-v1-Service.pdf.

3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the terms and definitions given in the UPnP Device Architecture:1 [1], the Multi-Screen Architecture:1 [2], and the ApplicationManagement:2 [3].

4 Notations and Conventions

See the Multi-Screen Architecture:1 [2].

5 Device Definitions

5.1 Device Type

The following device type identifies a device that is compliant with this specification:

urn:schemas-upnp-org:device:*ScreenDevice:2*

5.2 Device Model

ScreenDevice products shall implement minimum version numbers of all required embedded devices and services specified in the table below. A ScreenDevice may be either a *Root* device or may be *Embedded* in another UPnP device. A ScreenDevice (*Root* or *Embedded*) may in turn contain other standard or non-standard *Embedded* UPnP devices.

Table 1 — Device Requirements

DeviceType	Root	R/A [a]	ServiceType	R/A [a]	Service ID [b]
ScreenDevice:2	*Root* or *Embedded*	*R*	*ApplicationManagement:2*	*R*	*ApplicationManagement*
			DeviceProtection:1	*CR* [c]	*DeviceProtection*
			Standard non Multi-Screen services defined by UPnP (AV, Cloud, etc.) go here.	*O*	
			Non-standard services embedded by a UPnP vendor go here.	*X*	TBD
Standard devices embedded by a UPnP vendor go here	*Embedded*	*O*	Services as defined by the corresponding standard UPnP Device Definition go here		
Non-standard state variables implemented by a UPnP vendor go here	*Embedded*	*X*	*TBD*	*TBD*	*TBD*

[a] For a device this column indicates whether the state variable shall be implemented or not, where *R* = required, *A* = allowed, *CR* = conditionally required, *CA* = conditionally allowed, *X* = Non-standard, add *-D* when deprecated (e.g., *R-D*, *A-D*).

[b] Prefixed by **urn:upnp-org:serviceId:**

[c] Required if the ApplicationManagement service implementation supports the *SECURITY feature*.

5.2.1 Description of Device Requirements

Any instance of a ScreenDevice shall have an ApplicationManagement service. For a given instance (ScreenDevice), there shall only be one instance of these services. The DeviceProtection service [4] shall be present if the ApplicationManagement service implements the *SECURITY feature*. Other standard services, such as UPnP AV, Cloud, etc., may be added with semantics defined by the relevant specifications.

A *ScreenDevice:2* implementation shall respond to all SSDP queries that specify *ScreenDevice:1* and shall respond to all actions defined by *ScreenDevice:1*.

The ApplicationManagement service allows control points to manage applications of the ScreenDevices and the communications between applications providing various time-sensitive and interactive services including implementation-specific applications among various display devices.

6 XML Device Description

```
<?xml version="1.0"?>
```

```xml
<root xmlns="urn:schemas-upnp-org:device-1-0">
    <specVersion>
        <major>1</major>
        <minor>0</minor>
    </specVersion>
    <URLBase>base URL for all relative URLs</URLBase>
    <device>
        <deviceType>
            urn:schemas-upnp-org:device:ScreenDevice:2
        <deviceType>
        <friendlyName>short user-friendly title</friendlyName>
        <manufacturer>manufacturer name</manufacturer>
        <manufacturerURL>URL to manufacturer site</manufacturerURL>
        <modelDescription>long user-friendly title</modelDescription>
        <modelName>model name</modelName>
        <modelNumber>model number</modelNumber>
        <modelURL>URL to model site</modelURL>
        <serialNumber>manufacturer's serial number</serialNumber>
        <UDN>uuid:UUID</UDN>
        <UPC>Universal Product Code</UPC>
        <iconList>
            <icon>
                <mimetype>image/format</mimetype>
                <width>horizontal pixels</width>
                <height>vertical pixels</height>
                <depth>color depth</depth>
                <url>URL to icon</url>
            </icon>
            <!--XML to declare other icons, if any, go here-->
        </iconList>
        <serviceList>
            <service>
                <serviceType>
                    urn:schemas-upnp-org:service:ApplicationManagement:2
                </serviceType>
                <serviceId>
                    urn:upnp-org:serviceId:ApplicationManagement
                </serviceId>
                <SCPDURL>URL to service description</SCPDURL>
                <controlURL>URL for control</controlURL>
                <eventSubURL>URL for eventing</eventSubURL>
            </service>
            <service>
                <serviceType>
                    urn:schemas-upnp-org:service:DeviceProtection:1
                </serviceType>
                <serviceId>
                    urn:upnp-org:serviceId:DeviceProtection
                </serviceId>
                <SCPDURL>URL to service description</SCPDURL>
                <controlURL>URL for control</controlURL>
                <eventSubURL>URL for eventing</eventSubURL>
            </service>
            <!--Declarations for standard non Multi-Screen services defined by
            UPnP (if any) go here-->
            <!--Declarations for other services added by UPnP vendor
            (if any) go here-->
        </serviceList>
        <deviceList>
        <!--Description of embedded devices added by UPnP vendor (if any) go
        here-->
        </deviceList>
        <presentationURL>URL for presentation</presentationURL>
    </device>
</root>
```