# PUCC Metadata Specification -

# Home Appliance Part 1 IEEE1394 Devices

# (Version 1.0 – September 30, 2007)

**Peer-to-Peer Universal Computing Consortium (PUCC)**

**Intellectual Property Notice**

**Table of Content**

# 1. Introduction

This document defines the PUCC metadata specification for the devices which have an IEEE1394-compliant interface.

The target devices with an IEEE1394 interface are the devices which fall into the scope of the implementation guideline (*2) specified by the IEEE1394 Trade Association (*1).

(1)D-VHS devices

(2)Set Top Box (STB) devices

(3)TV devices

(4)DV devices

(5)AV-HDD devices

*1 http://www.1394ta.org/

*2 IEEE1394 Interface Implementation Guideline, which provides separate guidelines for each of the following devices.

D-VHS device

STB Device for Japanese BS/CS Digital Broadcasting System

STB Device for Japanese Terrestrial Digital Broadcasting System

TV Device for Japanese BS/CS Digital Broadcasting System

TV Device for Japanese Terrestrial Digital Broadcasting System

DV Device

AV-HDD Devices

Blue-ray Disc recorder/player Device

# 2. Terminology

## 2.1. Definitions

The following terms are defined in the PUCC Device Discovery and Service Invocation Protocol Specification.

- Service;

- Device;

The templates for devices and services are defined by the "PUCC Device and Service Metadata Template".

## 2.2. Abbreviations

| | |
|---|---|
| **PUCC** | Peer-to-Peer Universal Computing Consortium |
| **TD** | Technical Document |

| | |
|---|---|
| **TS** | Technical Specification |
| **TR** | Technical Report |
| **WG** | Working group |

# 3. Reference

**[PUCC]** "Peer-to-Peer Universal Computing Consortium",

URL: http://www.pucc.jp/

**[XML]** "Extensible Markup Language (XML) 1.0 (Second Edition)", W3C Recommendation 6 October 2000, T. Bray et al. URL: http://www.w3.org/TR/2000/REC-xml-20001006

**[HTTP]** "Hypertext Transfer Protocol -- HTTP/1.1", RFC2616, R. Fielding et al., June 1999. URL:http://www.ietf.org/rfc/rfc2616.txt

**[TCP]** "Transmission Control Protocol", RFC793, J. Postel. September1981.

URL: http://www.ietf.org/rfc/rfc793.txt

**[UDP]** "User Datagram Protocol", RFC768, J. Postel. August 28 1980.

URL: http://www.ietf.org/rfc/rfc768.txt

**[IP]** "Internet Protocol", RFC791, J. Postel. September 1981.

URL: http://www.ietf.org/rfc/rfc791.txt

**[URI]** "Universal Resource Identifier"

URL: http://www.w3.org/Addressing/

**[IEEE1394 AV/C]** "IEEE1394 AV/C Digital Interface Command Set General Specification Version 4.1"

URL: http://www.1394ta.org/

# 4. Goals and Requirements

## 4.1. Goal

The goal of this document is:

- To define the PUCC metadata for the devices which have an IEEE1394-compliant interface.

## 4.2. Requirements

### 4.2.1. Generality

The metadata description must be independent of any particular manufacture.

## Summary

The IEEE1394 Trade Association specifies the AV/C Digital Interface Command Set as a mechanism to remotely control devices with an IEEE 1394 interface. The device model of the AV/C Digital Interface Command Set consists of the AV/C unit and the AV/C subunit. The AV/C unit represents a device, while the AV/C subunit provides the functions that constitute the device.

The development of the PUCC metadata for the devices with an IEEE 1394 interface accompanies the mappings listed below.

- The AV/C unit to be mapped to the PUCC device
- The AV/C subunit to be mapped to the PUCC primitive device
- The AV/C Digital Interface Command Set to be mapped to the PUCC Service
- The state required for implementing the AV/C Digital Command Set is to be defined as state variables

The IEEE1394 Trade Association specifies an implementation guideline for the devices equipped with the AV/C Digital Interface Command Set. The PUCC metadata specification targets the AV/C units which fall under the scope of the implementation guideline. The PUCC metadata specification only targets the parts of the AV/C unit (the AV/C subunit and the AV/C Digital Interface Command Set) which deemed mandatory in the implementation guideline.

# 5. D-VHS Devices

This chapter defines the PUCC metadata specification for D-VHS devices.

## 5.1. Device Model

D-VHS devices adopt the device model shown below.

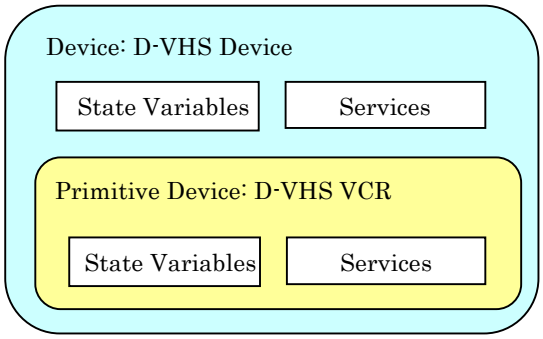


**Figure 6.1-1 D-VHS device model**

## 5.2. Device Type

The device type identifier of D-VHS devices is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS

The device type identifier of a D-VHS VCR primitive device that D-VHS devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR

## 5.3. State Variables

The state variables of D-VHS devices are shown below.

**Table6.3-1: D-VHS device state variables**

| | State Variable Name | Description | Data Type | Event Generation (Yes/No) |
|---|---|---|---|---|
| 1 | PowerState | Indicates the power state of D-VHS devices. Shown in either of the following 2 values.<br>Power ON<br>Power OFF | string | yes |
| 2 | SerialBusIsochronousInputPlugs | The number of Serial Bus Isochronous Input Plugs on the primitive device. | integer | no |
| 3 | SerialBusIsochronousOutputPlugs | The number of Serial Bus Isochronous Output Plugs on the primitive device. | integer | no |
| 4 | ExternalInputPlugs | The number of External Input Plugs on the primitive device. | integer | no |
| 5 | ExternalOutputPlugs | The number of External Output Plugs on the primitive device. | integer | no |

**Table 6.3-2 Values indicating the power status**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Power ON | Power ON status | On |
| 2 | Power OFF | Power OFF status<br>Note that this status should mean that the device exists on the IEEE1394 bus and is able to receive IEEE 1394 AV/C commands. | Off |

The state variables of D-VHS VCR primitive devices that D-VHS devices have are shown below.

**Table 6.3-3 D-VHS VCR primitive device state variables**

| | State Variable Name | Description | Data Type | Event Generation (Yes/No) |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | InputSignalMode | This state variable specifies the signal format the D-VHS VCR primitive device is currently configured to accept. | string | no |
| 2 | OutputSignalMode | This state variable specifies the signal format the D-VHS VCR primitive device is currently configured to transmit. | string | no |
| 3 | CassetteType | This state variable indicates the kind of cassette in the D-VHS VCR primitive device. | string | no |
| 4 | WriteProtectState | This state variable indicates the status of D-VHS VCR primitive device tapes with regard to write protection. | string | no |
| 5 | RecordingSpeed | This state variable indicates the recording speed for the transport mechanism of the D-VHS VCR primitive device. | string | no |
| 6 | RelativeTimeCounter | This state variable is the value displayed on a D-VHS device as the tape medium moves forward or backward. This value is relative to any arbitrary position established by the user; pushing reset button would normally reset the counter to zero, independent of the medium position. There is no relationship between data on the tape and the RTC counter value; the RTC is simply an indicator maintained by the D-VHS VCR primitive device, based on transport motion. | struct | no |
| 7 | TapePlaybackFormat | This state variable is the digital playback format of the D-VHS VCR primitive device. | struct | no |
| 8 | TapeRecordingFormat | This state variable is the recording format of the D-VHS VCR primitive device. | struct | no |
| 9 | TransportState | This state variable indicates the current state of the medium in the transport mechanism. | string | yes |

**Table 6.3-4 InputSignalMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | D-VHS Digital | D-VHS Digital | D-VHS |
| 2 | Analog VHS | Analog VHS NTSC 525/60 | VHS |
| 3 | Analog S-VHS | Analog S-VHS 525/60 | S-VHS |

**Table 6.3-5 OutputSignalMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | D-VHS Digital | D-VHS Digital | D-VHS |
| 2 | Analog VHS | Analog VHS NTSC 525/60 | VHS |
| 3 | Analog S-VHS | Analog S-VHS 525/60 | S-VHS |

**Table 6.3-6 CassetteType definition**

| | Value | | Meaning | Expression in string |
|---|---|---|---|---|
| 1 | No cassette | | No Cassette | NoCassette |
| 2 | Standard cassette | VHS | Standard cassette for VHS | StandardVHS |
| 3 | | S-VHS | Standard cassette for S-VHS | StandardS-VHS |
| 4 | | D-VHS | Standard cassette for D-VHS | StandardD-VHS |
| 5 | Compact cassette | VHS | Compact cassette for VHS | CompactVHS |
| 6 | | S-VHS | Compact cassette for S-VHS | CompactS-VHS |

**Table 6.3-7 WriteProtectState definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | No cassette | No cassette. | NoCassette |
| 2 | OK to record | OK to record on medium. | OK |
| 3 | Recording inhibited | Recording inhibited. | Inhibited |

**Table 6.3-8 RecordingSpeed definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | SP | Standard speed (29µm track pitch) for D-VHS.<br>SP mode for VHS | SP |
| 2 | EP | EP mode for VHS | EP |

**Table 6.3-9 RelativeTimeCounterstructure specification**

| | Name | | Data Type | Description |
|---|---|---|---|---|
| 1 | RelativeTimeCounter | | struct | - |
| 2 | | Sign | boolean | true : -<br>false:+ |
| 3 | | Second | integer | second |
| 4 | | Minute | integer | minute |
| 5 | | Hour | integer | hour |

**Table 6.3-10 TapePlaybackFormat structure specification**

| | Name | | Data Type | Description |
|---|---|---|---|---|
| 1 | TapePlaybackFormat | | struct | - |
| 2 | | ECCBlockSize | integer | The size of data, which constitute the product codes of main code. A value of zero is defined that one ECC block consists of 112 sync block |
| 3 | | ECCBlockNumber | integer | The number of ECC blocks per track. |
| 4 | | ProgramMode | integer | The structure of main code area. |
| 5 | | ScannerRotationSpeed | integer | The scanner rotation times per minute. |
| 6 | | 1.001Flag | boolean | This indicates whether or not the scanner rotation speed is 59.94Hz. |
| 7 | | OuterInterleave | integer | The number of tracks, which constitute on interleave block for the outer error correcting codes. |
| 8 | | RecordingMode | string | The current recording mode of the D-VHS VCR such as STD, High-Speed (HS) and Low-Speed (LS) modes, and specifies the appropriate mode for the application to be used. |
| 9 | | TimeCompressionRatio | integer | The time compression ratio of the recorded data. |

**Table 6.3-11 TapeRecordingFormatstructure specification**

| | Name | Data Type | Description |
|---|---|---|---|
| 1 | TapeRecordingFormat | struct | - |

| | | | | |
|---|---|---|---|---|
| 2 | | ECCBlockSize | integer | The size of data, which constitute the product codes of main code. A value of zero is defined that one ECC block consists of 112 sync block |
| 3 | | ECCBlockNumber | integer | The number of ECC blocks per track. |
| 4 | | ProgramMode | integer | The structure of main code area. |
| 5 | | ScannerRotationSpeed | integer | The scanner rotation times per minute. |
| 6 | | 1.001Flag | boolean | This indicates whether or not the scanner rotation speed is 59.94Hz. |
| 7 | | OuterInterleave | integer | The number of tracks, which constitute on interleave block for the outer error correcting codes. |
| 8 | | RecordingMode | string | The current recording mode of the D-VHS VCR such as STD, High-Speed (HS) and Low-Speed (LS) modes, and specifies the appropriate mode for the application to be used. |
| 9 | | TimeCompressionRatio | integer | The time compression ratio of the recorded data. |

**Table 6.3-12 RecordingMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | STD | This mode can provide the standard speed. | STD |
| 2 | HS | This mode can provide up to twice the data rate of the STD mode. | HS |
| 3 | LS2 | This mode can provide up to 1/2 the data rate of the STD mode. | LS2 |
| 4 | LS3 | This mode can provide up to 1/3 the data rate of the STD mode. | LS3 |
| 5 | LS5 | This mode can provide up to 1/5 the data rate of the STD mode. | LS5 |
| 6 | LS7 | This mode can provide up to 1/7 the data rate of the STD mode. | LS7 |

**Table 6.3-13 TransportState definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Eject | No medium is present | Eject |

| | | | |
|---|---|---|---|
| 2 | Forward | Playback at normal speed | Forward |
| 3 | ForwardPause | Pause in playback | ForwardPause |
| 4 | FastestForward | Playback at fastest speed | FastestForward |
| 5 | FastestReverse | Playback in reverse at fastest speed | FastestReverse |
| 6 | Record | Overwrite all signal(s) on the medium | Record |
| 7 | RecordPause | Pause while recording all signal(s) | RecordPause |
| 8 | FastForward | Move the medium away from the beginning of the medium | FastForward |
| 9 | Rewind | Move the medium toward the beginning of the medium | Rewind |
| 10 | Stop | Halt all transport mechanism motion | Stop |

## 5.4. Service

The services of D-VHS devices are shown below.

**Table 6.4-1.Services offered by D-VHS devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Power | This service is used to control or determine the power status of the D-VHS device. |
| 3 | SetInputConnection | This service is used to establish an internal input connection between an input plug or another primitive device and the D-VHS-VCR primitive device. |
| 4 | SetOutputConnection | This service is used to establish an internal output connection between the D-VHS-VCR primitive device and an output plug or another primitive device. |
| 5 | GetInputConnection | This service is used to inquire the current state of the input connection between an input plug or another primitive device and the D-VHS-VCR primitive device. |
| 6 | GetOutputConnection | This service is used to inquire the current state of the output connections between the D-VHS-VCR primitive device and an output plug or another primitive device. |
| 7 | GetIcon | This service is used to get the icon image of the D-VHS device. |

The details of the services are shown below.

### 5.4.1. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/QueryStateVariable

(3)Input parameter

**Table 6.4.1-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | Sets no value |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | Sets no value |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | Sets no value |
| 4 | ExternalInputPlugs | ExternalInputPlugs | Sets no value |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | Sets no value |

(4)Output parameter

**Table 6.4.1-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | See also Table 6.3-1 |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | See also Table 6.3-1 |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | See also Table 6.3-1 |
| 4 | ExternalInputPlugs | ExternalInputPlugs | See also Table 6.3-1 |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | See also Table 6.3-1 |

### 5.4.2. Power

(1)Description

This service is used to control or determine the power status of the D-VHS device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/Power

(3)Input parameter

**Table6.4.2-1.Power Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | power | PowerState | See also Table 6.3-1 |

(4)Output parameter

None

### 5.4.3. SetInputConnection

(1)Description

This service is used to establish an internal input connection between an input plug or another primitive device and the D-VHS-VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetInputConnection.

(3)Input parameter

**Table 6.4.3-1.SetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 6.4.3-2 |
| 2 | number | integer | Type dependent. |

**Table 6.4.3-2.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 6.4.3-3.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

(4)Output parameter

None

### 5.4.4. SetOutputConnection

(1)Description

This service is used to establish an internal output connection between the D-VHS-VCR primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetOutputConnection.

(3)Input parameter

**Table 6.4.4-1.SetOutputConnection Service Input parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 6.4.4-2 |
| 2 | number | integer | Type dependent. |

**Table 6.4.4-2.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 6.4.4-3.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

(4)Output parameter

None

### 5.4.5. GetInputConnection

(1)Description

This service is used to inquire the current state of the input connection between an input plug or another primitive device and the D-VHS-VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetInputConnection

(3)Input parameter

**Table 6.4.5-1.GetInputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 6.4.5-2.GetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 6.4.5-3 |
| 2 | number | integer | Type dependent. |

**Table 6.4.5-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 6.4.5-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

### 5.4.6. GetOutputConnection

(1)Description

This service is used to inquire the current state of the output connections between the D-VHS-VCR primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetOutputConnection

(3)Input parameter

**Table 6.4.6-1.GetOutputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 6.4.6-2.GetOutputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 6.4.6-3 |
| 2 | number | integer | Type dependent. |

**Table 6.4.6-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 6.4.6-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

### 5.4.7. GetIcon

(1)Description

This service is used to get the icon image of the D-VHS device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetIcon

(3)Input parameter

**Table6.4.7-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image |

The URL(url element) of the arbitrary icon data (Icon element) set for the static data （Specification element） of the metadata is set to the Input Parameter url.

(4)Output parameter

**Table6.4.7-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

The services of -VHS VCR primitive devices that D-VHS device have are shown below.

**Table6.4-2.Services offered by D-VHS VCR primitive devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Play | This service is used to request the transport mechanism to playback data previously recorded on the medium or pause in playback. |
| 3 | Stop | This service is used to halt all transport mechanism motion. |
| 4 | FastForward | This service is used to move the medium away from the beginning of the medium. |
| 5 | Rewind | This service is used to move the medium toward the beginning of the medium. |

| | | |
|---|---|---|
| 6 | Record | This service is used to request the transport mechanism to overwrite all signal(s) on the medium or pause while recording all signal(s). |
| 7 | SearchForward | This service is used to advance the transport mechanism a specified count of units relative to the current position. |
| 8 | SearchBackward | This service is used to reverse the transport mechanism a specified count of units relative to the current position. |
| 9 | SetInputSignalMode | This service is used to configure a D-VHS VCR primitive device to accept its input data in one of the formats defined by the D-VHS, S-VHS, or VHS Specifications. |
| 10 | SetOutputSignalMode | This service is used to configure a D-VHS VCR primitive device to transmit its output data in one of the formats defined by the D-VHS, S-VHS, and VHS Specifications. |
| 11 | SetRecordingSpeed | This service is used to set the recording speed for the D-VHS VCR primitive device's transport mechanism. |
| 12 | ResetRelativeTimeCounter | This service is used to reset the RelativeTimeCounter value for the D-VHS VCR primitive device. |
| 13 | SetTapePlaybackFormat | This service is used to specify the digital playback format of the D-VHS VCR primitive device. |
| 14 | SetTapeRecordingFormat | This service is used to specify the recording format of the D-VHS VCR primitive device. |
| 15 | GetIcon | This service is used to get the icon image of the D-VHS VCR primitive device. |

The details of each service are shown below.

### 5.4.8. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/QueryStateVariable

(3)Input parameter

**Table6.4.8-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | inputSignalMode | InputSignalMode | Sets no value |
| 2 | outputSignalMode | OutputSignalMode | Sets no value |
| 3 | cassetteType | CassetteType | Sets no value |
| 4 | writeProtectState | WriteProtectState | Sets no value |
| 5 | recordingSpeed | RecordingSpeed | Sets no value |
| 6 | relativeTimeCounter | RelativeTimeCounter | Sets no value |
| 7 | tapePlayBackFormat | TapePlayBackFormat | Sets no value |
| 8 | tapeRecordingFormat | TapeRecordingFormat | Sets no value |
| 9 | transportState | TransportState | Sets no value |

(4)Output parameter

**Table6.4.8-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | inputSignalMode | InputSignalMode | See also Table6.3.4 |
| 2 | outputSignalMode | OutputSignalMode | See also Table 6.3.5 |
| 3 | cassetteType | CassetteType | See also Table 6.3.6 |
| 4 | writeProtectState | WriteProtectState | See also Table 6.3.7 |
| 5 | recordingSpeed | RecordingSpeed | See also Table 6.3.8 |
| 6 | relativeTimeCounter | RelativeTimeCounter | See also Table 6.3.9 |
| 7 | tapePlayBackFormat | TapePlayBackFormat | See also Table 6.3.10 |
| 8 | tapeRecordingFormat | TapeRecordingFormat | See also Table 6.3.11 |
| 9 | transportState | TransportState | See also Table 6.3.13 |

### 5.4.9. Play

(1)Description

This service is used to request the transport mechanism to playback data previously recorded on the medium or pause in playback.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Play

(3)Input parameter

**Table6.4.9-1.Play Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | playbackMode | TransportState | string | Playback mode |

**Table6.4.9-2.playbackMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Forward | Playback at normal speed | Forward |
| 2 | Forward Pause | Pause in playback | ForwardPause |
| 3 | Fastest Forward | Playback at fastest speed | FastestForward |
| 4 | Fastest Reverse | Playback in reverse at fastest speed | FastestReverse |

(4)Output parameter

None

### 5.4.10. Stop

(1)Description

This service is used to halt all transport mechanism motion.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Stop

(3)Input parameter

None

(4)Output parameter

None

### 5.4.11. FastForward

(1)Description

This service is used to move the medium away from the beginning of the medium.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/FastForward

(3)Input parameter

None

(4)Output parameter

None

### 5.4.12. Rewind

(1)Description

This service is used to move the medium toward the beginning of the medium.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Rewind

(3)Input parameter

None

(4)Output parameter

None

### 5.4.13. Record

(1)Description

This service is used to request the transport mechanism to overwrite all signal(s) on the medium or pause while recording all signal(s).

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Record

(3)Input parameter

**Table6.4.13-1.Record Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | recordingMode | TransportState | string | Recording mode |

**Table6.4.13-2.recordingmode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Record | Overwrite all signal(s) on the medium | Record |
| 2 | Record Pause | Pause while recording all signal(s) | FastestReverse |

(4)Output parameter

None

### 5.4.14. SearchForward

(1)Description

The SearchForward service is used to advance the transport mechanism a specified count of units relative to the current position. Forward motion is defined as away from the beginning of the medium. The SearchForward service requests the D-VHS VCR primitive device to be paused in playback mode immediately after advancing the transport mechanism the specified count of units relative to the current position.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchForward

(3)Input parameter

**Table6.4.14-1.SearchForward Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | unit | None | string | The unit parameter determines the countable units as defined by the table below. |
| 2 | count | None | integer | The count parameter specifies the number of the units to be moved. In case the target can accept this service with its count value set to zero, the target shall return a response, but shall not advance the transport mechanism. |

**Table6.4.14-2 definition of unit**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Video Frame | This value indicates the control signal recorded on the medium. | VideoFrame |
| 2 | Video Scene | This value indicates the discontinuity of REC_DATE or REC_TIME data recorded on the medium. | VideoScene |

| | | | |
|---|---|---|---|
| 3 | VISS(VHS Index Search System) | VISS is the position marker used to search for the starting position of a recorded program, or for a user-specified position in the program.<br>VISS is marked on a control track by modifying the duty of control pulse for tracking in record or playback. | VISS |
| 4 | GOP for MPEG recording | The GOP indicates the picture data group with the intra-frame data in the MPEG recorded program. This value specifies a start position of GOP on the medium. | VISS |
| 5 | Index | Index indicates the position marker used to search for the starting position of a recorded program, or a user-specified position in the program.<br>The Index flag recorded on the medium is valid as the index.<br>The Index flag should be recorded for five seconds at the starting point of a program, or at each starting point of index areas in that program. In case the Marker flag is valid, the Index flag specifies the index area in the program. | VISS |
| 6 | Skip | Skip indicates the position marker for starting to skip a discarded area.<br>The Skip flag recoded on the medium is valid as skip.<br>The Skip flag should be recorded for two seconds at the starting position of a discarded area. During the skip operation, skipping can be stopped by finding a Start flag or Index flag. | Skip |

| | | | |
|---|---|---|---|
| 7 | Photo/Picture | Photo/Picture indicates the position marker used to search for the starting position of recorded picture data (still video, photo, etc). | Picture |
| 8 | Program start | Program start indicates the position marker to search for the starting position of a program.<br>The start flag recorded on the medium is valid as program start. The start flag is recorded at the starting position of a program for five seconds. | ProgramStart |
| 9 | Random marker | The random marker indicates the position marker used to search for the starting position of an interesting data area specified by the user.<br>The Marker flag recorded on the medium is valid as the random marker. The Marker flag is recorded for two seconds at the start position of an interesting area specified by the user. | RandomMarker |

(4)Output parameter

None

### 5.4.15. SearchBackward

(1)Description

The SearchBackward service is used to reverse the transport mechanism a specified count of units relative to the current position. Backward motion is defined as towards the beginning of the medium. The SearchBackward service requests the D-VHS VCR primitive device to be paused in playback mode immediately after reversing the transport mechanism the specified count of units relative to the current position.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchBackward

(3)Input parameter

**Table6.4.15-1.SearchBackward Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | unit | None | string | The unit parameter determines the countable units as defined by the table below. |
| 2 | count | None | integer | The count parameter specifies the number of the units to be moved. In case the target can accept this service with its count value set to zero, the target shall return a response, but shall not reverse the transport mechanism. |

**Table6.4.15-2 Definition of units**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Video Frame | This value indicates the control signal recorded on the medium. | VideoFrame |
| 2 | Video Scene | This value indicates the discontinuity of REC_DATE or REC_TIME data recorded on the medium. | VideoScene |

| | | | |
|---|---|---|---|
| 3 | VISS(VHS Index Search System) | VISS is the position marker used to search for the starting position of a recorded program, or for a user-specified position in the program.<br>VISS is marked on a control track by modifying the duty of control pulse for tracking in record or playback. | VISS |
| 4 | GOP for MPEG recording | The GOP indicates the picture data group with the intra-frame data in the MPEG recorded program. This value specifies a start position of GOP on the medium. | Gop |
| 5 | Index | Index indicates the position marker used to search for the starting position of a recorded program, or a user-specified position in the program.<br>The Index flag recorded on the medium is valid as the index.<br>The Index flag should be recorded for five seconds at the starting point of a program, or at each starting point of index areas in that program. In case the Marker flag is valid, the Index flag specifies the index area in the program. | Index |
| 6 | Skip | Skip indicates the position marker for starting to skip a discarded area.<br>The Skip flag recoded on the medium is valid as skip.<br>The Skip flag should be recorded for two seconds at the starting position of a discarded area. During the skip operation, skipping can be stopped by finding a Start flag or Index flag. | Skip |

| | | | |
|---|---|---|---|
| 7 | Photo/Picture | Photo/Picture indicates the position marker used to search for the starting position of recorded picture data ( still video, photo, etc ). | Picture |
| 8 | Program start | Program start indicates the position marker to search for the starting position of a program.<br>The start flag recorded on the medium is valid as program start. The start flag is recorded at the starting position of a program for five seconds. | ProgramStart |
| 9 | Random marker | The random marker indicates the position marker used to search for the starting position of an interesting data area specified by the user.<br>The Marker flag recorded on the medium is valid as the random marker. The Marker flag is recorded for two seconds at the start position of an interesting area specified by the user. | RandomMarker |

(4)Output parameter

None

### 5.4.16. SetInputSignalMode

(1)Description

This service is used to configure a D-VHS VCR primitive device to accept its input data in one of the formats defined by the D-VHS, S-VHS, or VHS Specifications.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetInputSignalMode

(3)Input parameter

**Table6.4.16-1.SetInputSignalMode Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | inputSignalMode | InputSignalMode | string | See also Table 6.3-4 |

(4)Output parameter

None

### 5.4.17. SetOutputSignalMode

(1)Description

This service is used to configure a D-VHS VCR primitive device to transmit its output data in one of the formats defined by D-VHS, S-VHS, or VHS Specifications.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetOutputSignalMode

(3)Input parameter

**Table6.4.17-1.SetIOutputSignalMode Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | outputSignalMode | OutputSignalMode | string | See also Table 6.3-5 |

(4)Output parameter

None

### 5.4.18. SetRecordingSpeed

(1)Description

This service is used to set the recording speed for the D-VHS VCR primitive device's transport mechanism.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetRecordingSpeed

(3)Input parameter

**Table6.4.18-1.SetRecordingSpeed Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | recordingSpeed | RecordingSpeed | string | See also Table 6.3-8 |

(4)Output parameter

None

### 5.4.19. ResetRelativeTimeCounter

(1)Description

This service is used to reset the RelativeTimeCounter value for the D-VHS-VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/ResetRelatimeTimeCounter

(3)Input parameter

None

(4)Output parameter

None

### 5.4.20. SetTapePlaybackFormat

(1)Description

This service is used to specify the digital playback format of the D-VHS-VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapePlayBackFormat

(3)Input parameter

**Table6.4.20-1.SetTapePlayBackFormat Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | tapePlaybackFormat | TapePlaybackFormat | string | See also Table 6.3-10 |

(4)Output parameter

None

### 5.4.21. SetTapeRecordingFormat

(1)Description

This service is used to specify the recording format of the D-VHS-VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapeRecordingFormat

(3)Input parameter

**Table6.4.21-1.SetTapeRecordingkFormat Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | tapeRecordingFormat | TapeRecordingFormat | string | See also Table 6.3-11 |

(4)Output parameter

None

### 5.4.22. GetIcon

(1)Description

This service is used to get the icon image of the D-VHS VCR primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/GetIcon

(3)Input parameter

**Table6.4.22-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image |

The URL(url element) of the arbitrary icon data (Icon element) set for the static data （Specification element）of the metadata is set to the Input Parameter url.

(4)Output parameter

**Table6.4.22-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

## 5.5. Metadata

### 5.5.1. Device Metadata

The metadata template of D-VHS devices is shown below.

This includes the metadata template of D-VHS-VCR primitive devices.

*Italic letters in red*: differ by the entity of each D-VHS device.

```
<?xml version="1.0"?>
<Device  type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS"  id="global unique ID for this device"
name="short user-friendly title">
  <Specification>
    <URLBase>base URL for all relative URLs</URLBase>
    <Manufacturer>manufacturer name</Manufacturer>
    <ManufactureDate>date of manufacture</ManufactureDate>
    <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>
  </Specification>
```

```
  <StateVariableList>
    <StateVariable  name="PowerState"  datatype="string"  sendEvents="yes">
      <DefaultValue>Off</DefaultValue>
      <AllowedValueList>
        <AllowedValue>On</AllowedValue>
        <AllowedValue>Off</AllowedValue>
      </AllowedValueList>
    </StateVariable>
    <StateVariable  name="SerialBusIsochronousInputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="SerialBusIsochronousOutputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="ExternalInputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="ExpernalOutputPlugs"  datatype="integer"  sendEvents="no" />
  </StateVariableList>
  <ServiceList>
    <Service  name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/QueryStateVariable"/>
    <Service  name="Power"  type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/Power"/>
    <Service  name="SetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetInputConnection"/>
    <Service  name="SetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetOutputConnection"/>
    <Service  name="GetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetInputConnection"/>
    <Service  name="GetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetOutputConnection"/>
    <Service  name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetIcon"/>
  </ServiceList>
  <PrimitiveDeviceList>
    <PrimitiveDevice  type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR"  id="global unique
ID for this device"  name="short user-friendly title">
      <Specification>
        <URLBase>base URL for all relative URLs</URLBase>
        <Manufacturer>manufacturer name</Manufacturer>
```

```
        <ManufactureDate>date of manufacture</ManufactureDate>
        <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>
      </Specification>
      <StateVariableList>
        <StateVariable    name="InputSignalMode"    datatype="string" sendEvents="no">
          <DefaultValue>D-VHS</DefaultValue>
          <AllowedValueList>
            <AllowedValue>D-VHS</AllowedValue>
            <AllowedValue>VHS</AllowedValue>
            <AllowedValue>S-VHS</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable    name="OutputSignalMode"    datatype="string" sendEvents="no">
          <DefaultValue>D-VHS</DefaultValue>
          <AllowedValueList>
            <AllowedValue>D-VHS</AllowedValue>
            <AllowedValue>VHS</AllowedValue>
```

```
            <AllowedValue>S-VHS</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable  name="CassetteType"  datatype="string" sendEvents="no">
          <DefaultValue>NoCassette</DefaultValue>
          <AllowedValueList>
            <AllowedValue>NoCassette</AllowedValue>
            <AllowedValue>StandardVHS</AllowedValue>
            <AllowedValue>StandardS-VHS</AllowedValue>
            <AllowedValue>StandardD-VHS</AllowedValue>
            <AllowedValue>CompactVHS</AllowedValue>
            <AllowedValue>CompactS-VHS</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable  name="WriteProtectState"  datatype="string" sendEvents="no">
          <DefaultValue>NoCassette</DefaultValue>
          <AllowedValueList>
            <AllowedValue>NoCassette</AllowedValue>
            <AllowedValue>OK</AllowedValue>
            <AllowedValue>Inhibited</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable  name="RecordingSpeed"  datatype="string" sendEvents="no">
          <DefaultValue>SP</DefaultValue>
          <AllowedValueList>
            <AllowedValue>SP</AllowedValue>
            <AllowedValue>EP</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable  name="RelativeTimeCounter"  datatype="struct" sendEvents="no">
          <StateVariable name="Sign" datatype="boolean" sendEvents="no"/>
          <StateVariable name="Second" datatype="integer" sendEvents="no"/>
          <StateVariable name="Minute" datatype="integer" sendEvents="no"/>
          <StateVariable name="Hour" datatype="integer" sendEvents="no"/>
```

```
        </StateVariable>
        <StateVariable    name="TapePlaybackFormat"    datatype="struct" sendEvents="no">
          <StateVariable name="ECCBlockSize" datatype="integer" sendEvents="no"/>
          <StateVariable name="ECCBlockNumber" datatype="integer" sendEvents="no"/>
          <StateVariable name="ProgramMode" datatype="integer" sendEvents="no"/>
          <StateVariable name="ScannerRotationSpeed" datatype="integer" sendEvents="no"/>
          <StateVariable name="1.001Flag" datatype="boolean" sendEvents="no"/>
          <StateVariable name="OuterInterleave" datatype="integer" sendEvents="no"/>
          <StateVariable name="RecordingMode" datatype="string" sendEvents="no"/>
          <StateVariable name="TimeCompressionRatio" datatype="integer" sendEvents="no"/>
        </StateVariable>
        <StateVariable    name="TapeRecordingFormat"    datatype="struct" sendEvents="no">
          <StateVariable name="ECCBlockSize" datatype="integer" sendEvents="no"/>
          <StateVariable name="ECCBlockNumber" datatype="integer" sendEvents="no"/>
          <StateVariable name="ProgramMode" datatype="integer" sendEvents="no"/>
          <StateVariable name="ScannerRotationSpeed" datatype="integer" sendEvents="no"/>
          <StateVariable name="1.001Flag" datatype="boolean" sendEvents="no"/>
          <StateVariable name="OuterInterleave" datatype="integer" sendEvents="no"/>
          <StateVariable name="RecordingMode" datatype="string" sendEvents="no"/>
          <StateVariable name="TimeCompressionRatio" datatype="integer" sendEvents="no"/>
        </StateVariable>
        <StateVariable    name="TransportState"    datatype="string"    sendEvents="yes">
          <DefaultValue>Eject</DefaultValue>
          <AllowedValueList>
            <AllowedValue>Eject</AllowedValue>
            <AllowedValue>Forward</AllowedValue>
            <AllowedValue>ForwardPause</AllowedValue>
            <AllowedValue>FastestForward</AllowedValue>
            <AllowedValue>FastestReverse</AllowedValue>
            <AllowedValue>Record</AllowedValue>
            <AllowedValue>RecordPause</AllowedValue>
            <AllowedValue>FastForward</AllowedValue>
            <AllowedValue>Rewind</AllowedValue>
            <AllowedValue>Stop</AllowedValue>
```

```
            </AllowedValueList>
          </StateVariable>
        </StateVariableList>
        <ServiceList>
          <Service   name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/QueryStateVariable"/>
          <Service   name="Play"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Play"/>
          <Service   name="Stop"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Stop"/>
          <Service   name="FastForward"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/FastForward"/>
          <Service   name="Rewind"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Rewind"/>
          <Service   name="Record"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Record"/>
          <Service   name="SearchForward"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchForward"/>
          <Service   name="SearchBackward"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchBackward"/>
          <Service   name="SetInputSignalMode"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetInputSignalMode"/>
          <Service   name="SetOutputSignalMode"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetOutputSignalMode"/>
          <Service   name="SetRecordingSpeed"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetRecordingSpeed"/>
          <Service   name="ResetRelativeTimeCounter"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/ResetRelativeTimeCounter"/>
          <Service   name="SetTapePlaybackFormat"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapePlaybackFormat"/>
          <Service   name="SetTapeRecordingFormat"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapeRecordingFormat"/>
          <Service   name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/GetIcon"/>
```

```
        </ServiceList>
      </PrimitiveDevice>
   </PrimitiveDeviceList>
</Device>
```

### 5.5.2. Service Metadata

The metadata templates of the services that D-VHS devices have are shown below.

(1)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </OutputParameterList>
</Service>
```

(2)Power Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/Power" name="Power">
    <InputParameterList>
        <Parameter name="power" relatedStateVariable="PowerState"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(3)SetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetInputConnection"
name="SetInputConnection">
    <InputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(4)SetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/SetOutputConnection"
name="SetOutputConnection">
    <InputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
```

```
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(5)GetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetInputConnection"
name="GetInputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList>
</Service>
```

(6)GetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetOutputConnection"
name="GetOutputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList/>
</Service>
```

(7)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services that D-VHS-VCR primitive devices have are shown below.

(8)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="InputSignalMode" relatedStateVariable="InputSignalMode"/>
        <Parameter name="OutputSignalMode" relatedStateVariable="OutputSignalMode"/>
        <Parameter name="CassetteType" relatedStateVariable="CassetteType"/>
        <Parameter name="WriteProtectState" relatedStateVariable="WriteProtectState"/>
        <Parameter name="RecordingSpeed" relatedStateVariable="RecordingSpeed"/>
        <Parameter name="RelativeTimeCounter" relatedStateVariable="RelativeTimeCounter"/>
        <Parameter name="TapePlaybackFormat" relatedStateVariable="TapePlaybackFormat"/>
        <Parameter name="TapeRecordingFormat" relatedStateVariable="TapeRecordingFormat"/>
        <Parameter name="TransportState" relatedStateVariable="TransportState"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="InputSignalMode" relatedStateVariable="InputSignalMode"/>
        <Parameter name="OutputSignalMode" relatedStateVariable="OutputSignalMode"/>
        <Parameter name="CassetteType" relatedStateVariable="CassetteType"/>
        <Parameter name="WriteProtectState" relatedStateVariable="WriteProtectState"/>
        <Parameter name="RecordingSpeed" relatedStateVariable="RecordingSpeed"/>
        <Parameter name="RelativeTimeCounter" relatedStateVariable="RelativeTimeCounter"/>
        <Parameter name="TapePlaybackFormat" relatedStateVariable="TapePlaybackFormat"/>
        <Parameter name="TapeRecordingFormat" relatedStateVariable="TapeRecordingFormat"/>
        <Parameter name="TransportState" relatedStateVariable="TransportState"/>
    </OutputParameterList>
</Service>
```

(9)Play Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Play" name="Play">
    <InputParameterList>
```

```
        <Parameter name="playbackMode" datatype="string">
            <AllowedValueList>
                <AllowedValue>Forward</AllowedValue>
                <AllowedValue>ForwardPause</AllowedValue>
                <AllowedValue>FastestForward</AllowedValue>
                <AllowedValue>FastestForward</AllowedValue>
            <AllowedValueList>
        </Parameter>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(10)Stop Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Stop" name="Stop">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(11)FastForward Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/FastForward"
name="FastForward">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(12)Rewind Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Rewind" name="Rewind">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(13)Record Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/Record" name="Record">
    <InputParameterList>
        <Parameter name="recordingMode" datatype="string">
            <AllowedValueList>
                <AllowedValue>Record</AllowedValue>
                <AllowedValue>RecordPause</AllowedValue>
            <AllowedValueList>
        </Parameter>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(14)SearchForward Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchForward"
name="SearchForward">
    <InputParameterList>
        <Parameter name="unit" datatype="string">
            <AllowedValueList>
                <AllowedValue>VideoFrame</AllowedValue>
                <AllowedValue>VideoScene</AllowedValue>
                <AllowedValue>VISS</AllowedValue>
                <AllowedValue>Gop</AllowedValue>
                <AllowedValue>Index</AllowedValue>
                <AllowedValue>Skip</AllowedValue>
                <AllowedValue>Picture</AllowedValue>
                <AllowedValue>ProgramStart</AllowedValue>
                <AllowedValue>RandomMarker</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="count" datatype="integer"/>
```

```
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(15)SearchBackward Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SearchBackward"
name="SearchBackward">
    <InputParameterList>
        <Parameter name="unit" datatype="string">
            <AllowedValueList>
                <AllowedValue>VideoFrame</AllowedValue>
                <AllowedValue>VideoScene</AllowedValue>
                <AllowedValue>VISS</AllowedValue>
                <AllowedValue>Gop</AllowedValue>
                <AllowedValue>Index</AllowedValue>
                <AllowedValue>Skip</AllowedValue>
                <AllowedValue>Picture</AllowedValue>
                <AllowedValue>ProgramStart</AllowedValue>
                <AllowedValue>RandomMarker</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="count" datatype="integer"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(16)SetInputSignalMode Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetInputSignalMode"
name="SetInputSignalMode">
    <InputParameterList>
        <Parameter name="inputSignalMode" relatedStateVariable="InputSignalMode"/>
    </InputParameterList>
```

```
    <OutputParameterList/>
</Service>
```

(17)SetOutputSignalMode Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetOutputSignalMode"
name="SetOutputSignalMode">
    <InputParameterList>
        <Parameter name="outputSignalMode" relatedStateVariable="OutputSignalMode"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(18)SetRecordingSpeed Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetRecordingSpeed"
name="SetRecordingSpeed">
    <InputParameterList>
        <Parameter name="recordingSpeed" relatedStateVariable="RecordingSpeed"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(19)ResetRelativeTimeCounter Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/ResetRelativeTimeCounter"
name="ResetRelativeTimeCounter">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(20)SetTapePlaybackFormat Service metadata

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

```
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapePlaybackFormat"
name="SetTapePlaybackFormat">
    <InputParameterList>
        <Parameter name="tapePlaybackFormat" relatedStateVariable="TapePlaybackFormat"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(21)SetTapeRecordingFormat Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/SetTapeRecordingFormat "
name="SetTapeRecordingFormat">
    <InputParameterList>
        <Parameter name="tapeRecordingFormat" relatedStateVariable="TapeRecordingFormat"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(22)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/D-VHS-VCR/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

# 6. Set Top Box (STB) Devices

This chapter defines the PUCC metadata specification for Set Top Box (STB) devices.

## 6.1. Device Model

Set Top Box (STB) devices adopt the device model shown below.

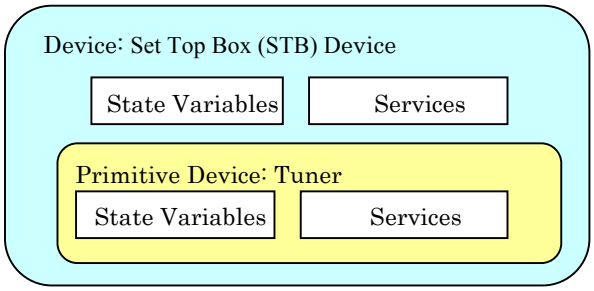


**Figure 7.1-1. Set Top Box (STB) device model**

## 6.2. Device Type

The device type identifier of Set Top Box (STB) devices is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/STB

The device type identifier of tuner primitive devices that Set Top Box (STB) devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner

## 6.3. State Variables

The state variables of Set Top Box (STB) devices are shown below.

**Table7.3-1: Set Top Box (STB) device state variables**

| | State Variable Name | Description | Data Type | Event Generation (Yes/No) |
|---|---|---|---|---|
| 1 | PowerState | Indicates the power status of STB devices. Shown in either of the following 2 values.<br>Power ON<br>Power OFF | string | yes |
| 2 | SerialBusIsochronousInputPlugs | The number of Serial Bus Isochronous Input Plugs on the primitive device. | integer | no |
| 3 | SerialBusIsochronousOutputPlugs | The number of Serial Bus Isochronous Output Plugs on the primitive device. | integer | no |
| 4 | ExternalInputPlugs | The number of External Input Plugs on the primitive device. | integer | no |
| 5 | ExternalOutputPlugs | The number of External Output Plugs on the primitive device. | integer | no |

**Table 7.3-2 Values indicating the power status**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | PowerON | Power ON status | On |
| 2 | PowerOFF | Power OFF status<br>Note that this status should mean that the device exists on the IEEE1394 bus and is able to receive IEEE 1394 AV/C commands. | Off |

The state variables of the tuner primitive device that Set Top Box (STB) device has are shown below.

**Table 7.3-3 tuner primitive device state variables**

| | State Variable Name | Description | Data Type | Event Generation( Yes/No) |
|---|---|---|---|---|
| 1 | ChannelType | Indicates the channel type.<br>Shown in either one of the following 4 values.<br>Terrestrial digital broadcasting<br>BS digital broadcasting<br>Broadband 110°CS digital broadcasting (PlatOne)<br>Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | string | No |
| 2 | ChannelNumber | Indicates the channel number<br>Shown in a value from one to 999 | positiveI nteger | No |

**Table 7.3-4 Values indicating channel types**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Terrestrial digital broadcasting | Indicates a terrestrial digital broadcasting channel | TerrestrialDigital |
| 2 | BS digital broadcasting | Indicates a BS digital broadcasting channel | BSDigital |
| 3 | Broadband 110°CS digital broadcasting (PlatOne) | Indicates the channel of Broadband 110°CS digital broadcasting(PlatOne) | CSDigital1 |
| 4 | Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | Indicates the channel of Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | CSDigital2 |

## 6.4. Services

The services of Set Top Box (STB) devices are shown below.

**Table 7.4-1. Services offered by Set Top Box (STB) devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Power | This service controls the Power ON/OFF. |
| 3 | GetInputConnection | This service is used to inquire the current state of the input connection between an input plug or another primitive device and the tuner primitive device. |
| 4 | GetOutputConnection | This service is used to inquire the current state of the output connections between the tuner primitive device and an output plug or another primitive device. |
| 5 | GetIcon | This service obtains an icon image. |

The details of each service are shown below.

### 6.4.1. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/QueryStateVariable

(3)Input parameter

**Table 7.4.1-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | Sets no value |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | Sets no value |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | Sets no value |
| 4 | ExternalInputPlugs | ExternalInputPlugs | Sets no value |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | Sets no value |

(4)Output parameter

**Table 7.4.1-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | See also Table 7.3-1 |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | See also Table 7.3-1 |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | See also Table 7.3-1 |
| 4 | ExternalInputPlugs | ExternalInputPlugs | See also Table 7.3-1 |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | See also Table 7.3-1 |

### 6.4.2. Power

(1)Description

This service controls the Power ON/OFF.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/Power

(3)Input parameter

**Table 7.4.2-1.Power Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | power | PowerState | See also Table 7.3-1 |

(4)Output parameter

None

### 6.4.3. GetInputConnection

(1)Description

This service is used to inquire the current state of the input connection between an input plug or another primitive device and the tuner primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetInputConnection

(3)Input parameter

**Table 7.4.3-1.GetIntputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 7.4.3-2.GetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 7.4.3-3 |
| 2 | number | integer | type dependent. |

**Table 7.4.3-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 7.4.3-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

### 6.4.4. GetOutputConnection

(1)Description

This service is used to inquire the current state of the output connections between the tuner primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetOutputConnection

(3)Input parameter

**Table 7.4.4-1.GetOutputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 7.4.4-2.SetOutputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 7.4.4-3 |
| 2 | number | integer | type dependent. |

**Table 7.4.4-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 7.4.4-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

### 6.4.5. GetIcon

(1)Description

This service obtains an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetIcon

(3)Input parameter

**Table7.4.5-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table7.4.5-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

The services of the tuner primitive that the Set Top Box (STB) device has are shown below.

**See also Table 7.4-2. Services offered by tuner primitive devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | SelectChannel | This service is used to select a channel. |

| | | |
|---|---|---|
| 3 | GetIcon | This service is used to obtain an icon image. |

The details of each service are shown below.

### 6.4.6. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable

(3)Input parameter

**Table 7.4.6-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | Sets no value |
| 2 | channelNumber | ChannelNumber | Sets no value |

(4)Output parameter

**Table 7.4.6-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | See also Table 7.3-3 |
| 2 | channelNumber | ChannelNumber | See also Table 7.3-3 |

### 6.4.7. SelectChannel

(1)Description

This service is used to select a channel.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel

(3)Input parameter

**Table 7.4.7-1.SelectChannel Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | See also Table 7.3-3 |
| 2 | channelNumber | ChannelNumber | See also Table 7.3-3 |

(4)Output parameter

None

### 6.4.8. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon

(3)Input parameter

**Table7.4.8-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table7.4.8-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

## 6.5. Metadata

### 6.5.1. Device Metadata

The metadata template of Set Top Box (STB) device is shown below.

This includes the metadata template of tuner primitive devices.

*Italic letters in red*: differ by the entity of each STB device.

```
<?xml version="1.0"?>
<Device type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB" id="global unique ID for this device"
name="short user-friendly title">
  <Specification>
    <URLBase>base URL for all relative URLs</URLBase>
    <Manufacturer>manufacturer name</Manufacturer>
    <ManufactureDate>date of manufacture</ManufactureDate>
    <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>
  </Specification>
  <StateVariableList>
```

```
      <StateVariable   name="PowerState"   datatype="string"   sendEvents="yes">
        <DefaultValue>Off</DefaultValue>
        <AllowedValueList>
          <AllowedValue>On</AllowedValue>
          <AllowedValue>Off</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable   name="SerialBusIsochronousInputPlugs"   datatype="integer"   sendEvents="no" />
      <StateVariable   name="SerialBusIsochronousOutputPlugs"   datatype="integer"   sendEvents="no" />
      <StateVariable   name="ExternalInputPlugs"   datatype="integer"   sendEvents="no" />
      <StateVariable   name="ExpernalOutputPlugs"   datatype="integer"   sendEvents="no" />
    </StateVariableList>
    <ServiceList>
      <Service   name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/QueryStateVariable"/>
      <Service   name="Power"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/Power"/>
      <Service   name="GetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetInputConnection"/>
      <Service   name="GetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetOutputConnection"/>
      <Service   name="GetIcon"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetIcon"/>
    </ServiceList>
    <PrimitiveDeviceList>
      <PrimitiveDevice   type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner"   id="global unique ID for
this device"   name="short user-friendly title">
        <Specification>
          <URLBase>base URL for all relative URLs</URLBase>
          <Manufacturer>manufacturer name</Manufacturer>
          <ManufactureDate>date of manufacture</ManufactureDate>
          <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>
      </Specification>
      <StateVariableList>
        <StateVariable  name="ChannelType"  datatype="string"  sendEvents="no">
          <DefaultValue>TerrestrialDigital</DefaultValue>
          <AllowedValueList>
            <AllowedValue>TerrestrialDigital</AllowedValue>
            <AllowedValue>BSDigital</AllowedValue>
            <AllowedValue>CSDigital1</AllowedValue>
            <AllowedValue>CSDigital2</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable  name="ChannelNumber"  datatype="positiveInteger"  sendEvents="no"/>
      </StateVariableList>
      <ServiceList>
        <Service  name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable"/>
        <Service  name="SelectChannel"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel"/>
        <Service  name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon"/>
      </ServiceList>
```

```
    </PrimitiveDevice>
  </PrimitiveDeviceList>
</Device>
```

### 6.5.2. Service metadata

The metadata templates of the services that Set Top Box (STB) devices have are shown below.

(1)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </OutputParameterList>
</Service>
```

(2)Power Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/Power" name="Power">
```

```
    <InputParameterList>
        <Parameter name="power" relatedStateVariable="PowerState"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(3)GetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetInputConnection"
name="GetInputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList>
</Service>
```

(4)GetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetOutputConnection"
name="GetOutputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
```

```
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList/>
</Service>
```

(5)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/STB/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services that tuner primitive devices have are shown below.

(6)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
```

```
        <Parameter name="ChannelType" relatedStateVariable="ChannelType"/>
        <Parameter name="ChannelNumber" relatedStateVariable="ChannelNumber"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="ChannelType" relatedStateVariable="ChannelType"/>
        <Parameter name="ChannelNumber" relatedStateVariable="ChannelNumber"/>
    </OutputParameterList>
</Service>
```

(7)SelectChannel Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel"
name="SelectChannel">
    <InputParameterList>
        <Parameter name="channelType" relatedStateVariable="ChannelType"/>
        <Parameter name="channelNumber" relatedStateVariable="ChannelNumber"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(8)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

# 7. TV Devices

This chapter defines the PUCC metadata specification for TV devices.

## 7.1. Device Model

TV devices adopt the device model shown below.

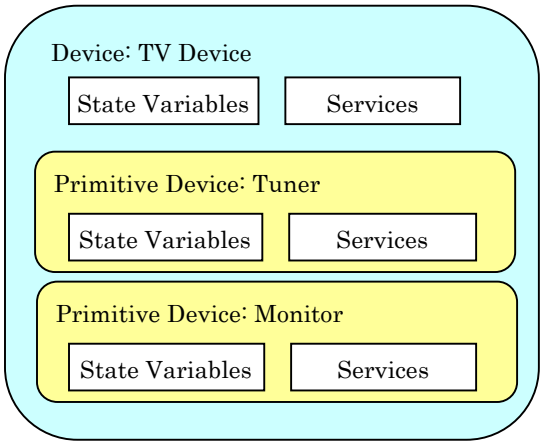


**Figure 8.1-1. TV device model**

## 7.2. Device Type

The device type identifier of TV devices is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/TV

The device type identifier of a tuner primitive device that TV devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner

The device type identifier of a monitor primitive device that TV devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor

## 7.3. State Variables

The state variables of TV devices are shown below.

**Table8.3-1: TV device state variables**

| | State Variable Name | Description | Data Type | Event Generation(Yes/No) |
|---|---|---|---|---|
| 1 | PowerState | Indicates the power status of TV devices.<br>Shown in either of the following 2 values.<br>PowerON<br>PowerOFF | string | Yes |
| 2 | SerialBusIsochronousInputPlugs | The number of Serial Bus Isochronous Input Plugs on the primitive device. | integer | No |
| 3 | SerialBusIsochronousOutputPlugs | The number of Serial Bus Isochronous Output Plugs on the primitive device. | integer | No |
| 4 | ExternalInputPlugs | The number of External Input Plugs on the primitive device. | integer | No |
| 5 | ExternalOutputPlugs | The number of External Output Plugs on the primitive device. | integer | No |

**Table8.3-2 Values indicating the power status**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | PowerON | Power ON status | On |
| 2 | PowerOFF | Power OFF status<br>Power OFF status<br>Note that this status should mean that the device exists on the IEEE1394 bus and is able to receive IEEE 1394 AV/C commands. | Off |

The state variables of a tuner primitive device that TV devices have are shown below.

**Table 8.3-3 Tuner primitive device state variables**

| | State Variable Name | Description | Data Type | Event Generation(Yes/No) |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | ChannelType | Indicates a channel type.<br>Shown in any of the following 4 values.<br>Terrestrial digital broadcasting<br>BS digital broadcasting<br>Broadband 110°CS digital broadcasting (PlatOne)<br>Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | string | None |
| 2 | ChannelNumber | Indicates a channel number.<br>Shown in any of the values from 1 to 999. | Positive Integer | None |

**Table 8.3-4 Values indicating channel types**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Terrestrial digital broadcasting | Indicates a terrestrial digital broadcasting channel | TerrestrialDigital |
| 2 | BS digital broadcasting | Indicates a BS digital broadcasting channel | BSDigital |
| 3 | Broadband 110°CS digital broadcasting (PlatOne) | Indicates the channel of Broadband 110°CS digital broadcasting(PlatOne) | CSDigital1 |
| 4 | Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | Indicates the channel of Broadband 110°CS digital broadcasting (SkyPerfecTV!2) | CSDigital2 |

The state variables of a monitor primitive device that TV devices have are shown below.

**Table8.3-5: Monitor primitive device state variables**

| | State Variable Name | Description | Data Type | Event Generation( Yes/No) |
|---|---|---|---|---|
| 1 | DisplayState | Indicates the display state.<br>Shown in either of the following 2 values.<br>Display ON<br>Display OFF | string | None |

**Table8.3-6 Values indicating the display state**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Display ON | The monitor display is turned ON. | On |
| 2 | Display OFF | The monitor display is turned OFF. | Off |

## 7.4. Services

The services of TV devices are shown below.

**Table 8.4-1. Services offered by TV devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Power | This service controls the PowerON/OFF. |
| 3 | GetInputConnection | This service is used to inquire the current state of the input connection between an input plug or another primitive device and the tuner or monitor primitive device. |
| 4 | GetOutputConnection | This service is used to inquire the current state of the output connections between the tuner or monitor primitive device and an output plug or another primitive device. |
| 5 | GetIcon | This service obtains an icon image. |

The details of each service are shown below.

### 7.4.1. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/QueryStateVariable

(3)Input parameter

**Table 8.4.1-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | Sets no value |

| | | | |
|---|---|---|---|
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | Sets no value |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | Sets no value |
| 4 | ExternalInputPlugs | ExternalInputPlugs | Sets no value |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | Sets no value |

(4)Output parameter

**Table 8.4.1-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | See also Table 8.3-1 |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | See also Table 8.3-1 |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | See also Table 8.3-1 |
| 4 | ExternalInputPlugs | ExternalInputPlugs | See also Table 8.3-1 |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | See also Table 8.3-1 |

### 7.4.2. Power

(1)Description

This service controls the PowerON/OFF.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/Power

(3)Input parameter

**Table 8.4.2-1.Power Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | power | PowerState | See also Table 8.3-1 |

(4)Output parameter

None

### 7.4.3. GetInputConnection

(1)Description

This service is used to inquire the current state of the input connection between an input plug or another primitive device and the tuner primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetInputConnection

(3)Input parameter

**Table 8.4.3-1.GetInputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 8.4.3-2.GetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 8.4.3-3 |
| 2 | number | integer | Type dependent. |

**Table 8.4.3-3. Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 8.4.3-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |

| | | | |
|---|---|---|---|
| 5 | External Input Plug | External Input Plug number | 0-31 |

### 7.4.4. GetOutputConnection

(1)Description

This service is used to inquire the current state of the output connections between the tuner primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetOutputConnection

(3)Input parameter

**Table 8.4.4-1.GetOutputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 8.4.4-2.GetOutputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 8.4.4-3 |
| 2 | number | integer | Type dependent. |

**Table 8.4.4-3. Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 8.4.4-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

### 7.4.5. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetIcon

(3)Input parameter

**Table8.4.5-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table8.4.5-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |

| | | | | |
|---|---|---|---|---|
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

The services of a tuner primitive device that TV devices have are shown below.

**See also Table 8.4-2. Services offered by tuner primitive devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | SelectChannel | This service is used to select a channel. |
| 3 | GetIcon | This service is used to obtain an icon image. |

The details of each service are shown below.

### 7.4.6. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable

(3)Input parameter

**Table 8.4.6-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | Sets no value |
| 2 | channelNumber | ChannelNumber | Sets no value |

(4)Output parameter

**Table 8.4.6-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | See also Table 8.3-3 |
| 2 | channelNumber | ChannelNumber | See also Table 8.3-3 |

### 7.4.7. SelectChannel

(1)Description

This service is use to select a channel.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel

(3)Input parameter

**Table 8.4.7-1.SelectChannel Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | channelType | ChannelType | See also Table 8.3-3 |
| 2 | channelNumber | ChannelNumber | See also Table 8.3-3 |

(4)Output parameter

None

### 7.4.8. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon

(3)Input parameter

**Table8.4.8-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table8.4.8-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

The services of a monitor primitive device that TV devices have are shown below.

**See also Table 8.4-3. Services offered by monitor primitive devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Display | This service is used to display a monitor. |
| 3 | GetIcon | This service is used to obtain an icon image. |

The services of each service are shown below.

### 7.4.9. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/QueryStateVariable

(3)Input parameter

**Table 8.4.9-1.QueryStateVariable Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | displayState | DisplayState | Sets no value |

(4)Output parameter

**Table 8.4.9-2.QueryStateVariable Service Output parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | displayState | DisplayState | See also Table 8.3-5 |

### 7.4.10. Display

(1)Description

This service is used to turn on and off a monitor display.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/Display

(3)Input parameter

**Table 8.4.10-1.SelectChannel Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | display | DisplayState | See also Table 8.3-5 |

(4)Output parameter

None

### 7.4.11. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/GetIcon

(3)Input parameter

**Table8.4.11-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table8.4.11-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

## 7.5. Metadata

### 7.5.1. Device Metadata

The metadata template of TV devices is shown below.

This includes the metadata templates of tuner primitive devices and monitor primitive devices.

*Italic letters in red*: differ by the entity of each TV device.

```
<?xml version="1.0"?>
<Device type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV" id="global unique ID for this device"
name="short user-friendly title">
  <Specification>
    <URLBase>base URL for all relative URLs</URLBase>
    <Manufacturer>manufacturer name</Manufacturer>
    <ManufactureDate>date of manufacture</ManufactureDate>
    <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>
    </Specification>
    <StateVariableList>
      <StateVariable  name="PowerState"  datatype="string"  sendEvents="yes">
        <DefaultValue>Off</DefaultValue>
        <AllowedValueList>
          <AllowedValue>On</AllowedValue>
          <AllowedValue>Off</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable  name="SerialBusIsochronousInputPlugs"  datatype="integer"  sendEvents="no" />
      <StateVariable  name="SerialBusIsochronousOutputPlugs"  datatype="integer"  sendEvents="no" />
      <StateVariable  name="ExternalInputPlugs"  datatype="integer"  sendEvents="no" />
      <StateVariable  name="ExpernalOutputPlugs"  datatype="integer"  sendEvents="no" />
    </StateVariableList>
    <ServiceList>
      <Service  name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/QueryStateVariable"/>
      <Service  name="Power"  type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/Power"/>
      <Service  name="GetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetInputConnection"/>
      <Service  name="GetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetOutputConnection"/>
      <Service  name="GetIcon"  type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetIcon"/>
    </ServiceList>
    <PrimitiveDeviceList>
```

```
<PrimitiveDevice type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner" id="global unique ID for this device" name="short user-friendly title">
  <Specification>
    <URLBase>base URL for all relative URLs</URLBase>
    <Manufacturer>manufacturer name</Manufacturer>
    <ManufactureDate>date of manufacture</ManufactureDate>
    <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>
  </Specification>
  <StateVariableList>
    <StateVariable name="ChannelType" datatype="string" sendEvents="no">
      <DefaultValue>TerrestrialDigital</DefaultValue>
      <AllowedValueList>
        <AllowedValue>TerrestrialDigital</AllowedValue>
        <AllowedValue>BSDigital</AllowedValue>
        <AllowedValue>CSDigital1</AllowedValue>
        <AllowedValue>CSDigital2</AllowedValue>
      </AllowedValueList>
```

```
            </StateVariable>
            <StateVariable    name="ChannelNumber"    datatype="positiveInteger"    sendEvents="no"/>
          </StateVariableList>
          <ServiceList>
            <Service    name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable"/>
            <Service    name="SelectChannel"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel"/>
            <Service    name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon"/>
          </ServiceList>
        </PrimitiveDevice>
        <PrimitiveDevice    type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor"    id="global unique ID
for this device"    name="short user-friendly title">
          <Specification>
            <URLBase>base URL for all relative URLs</URLBase>
            <Manufacturer>manufacturer name</Manufacturer>
            <ManufactureDate>date of manufacture</ManufactureDate>
            <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>
        </Specification>
        <StateVariableList>
          <StateVariable    name="DisplayState"    datatype="string"    sendEvents="no">
            <DefaultValue>Off</DefaultValue>
            <AllowedValueList>
              <AllowedValue>On</AllowedValue>
              <AllowedValue>Off</AllowedValue>
            </AllowedValueList>
          </StateVariable>
        </StateVariableList>
        <ServiceList>
          <Service    name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/QueryStateVariable"/>
          <Service    name="Display"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/Display"/>
          <Service    name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/GetIcon"/>
        </ServiceList>
      </PrimitiveDevice>
    </PrimitiveDeviceList>
</Device>
```

### 7.5.2. Service Metadata

The metadata templates of the services that TV devices have are shown below.

(1)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
```

```
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs"
relatedStateVariable="SerialBusIsochronousOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs" relatedStateVariable="ExternalOutputPlugs"/>
    </OutputParameterList>
</Service>
```

(2)Power Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/Power" name="Power">
    <InputParameterList>
        <Parameter name="power" relatedStateVariable="PowerState"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(3)GetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetInputConnection"
name="GetInputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
```

```
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList>
</Service>
```

(4)GetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetOutputConnection"
name="GetOutputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList/>
```

```
</Service>
```

(5)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/TV/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services that tuner primitive devices have are shown below.

(6)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="ChannelType" relatedStateVariable="ChannelType"/>
        <Parameter name="ChannelNumber" relatedStateVariable="ChannelNumber"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="ChannelType" relatedStateVariable="ChannelType"/>
        <Parameter name="ChannelNumber" relatedStateVariable="ChannelNumber"/>
    </OutputParameterList>
</Service>
```

(7)SelectChannel Service metadata

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

```
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/SelectChannel"
name="SelectChannel">
    <InputParameterList>
        <Parameter name="channelType" relatedStateVariable="ChannelType"/>
        <Parameter name="channelNumber" relatedStateVariable="ChannelNumber"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(8)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Tuner/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services that monitor primitive device have are shown below.

(9)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="DisplayState" relatedStateVariable="DisplayState"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="DisplayState" relatedStateVariable="DisplayState"/>
```

```
    </OutputParameterList>
</Service>
```

(10)Display Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/Display" name="Display">
    <InputParameterList>
        <Parameter name="display" relatedStateVariable="DisplayState"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(11)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Monitor/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

# 8. DV Devices

This chapter defines the PUCC metadata specification for DV devices.

## 8.1. Device Model

DV devices adopt the device model shown below.

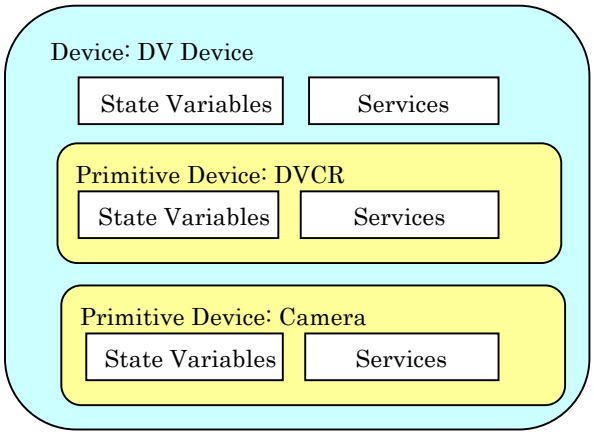


**Figure 9.1-1. DV device model**

## 8.2. Device Type

The device type identifier of DV devices are shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/DV

The device type identifier of a DVCR primitive device that DV devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR

The device type identifier of a camera primitive device that DV devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/Camera

## 8.3. State Variables

This is no state variables for DV devices.

The state variables of a DVCR primitive device that DV devices have are shown below.

**Table 9.3-1 DVCR primitive device state variables**

| | State Variable Name | Description | Data Type | Event Generation( Yes/No) |
|---|---|---|---|---|
| 1 | AbsoluteTrackNumber | This state variable indicates the absolute track number value for the current medium position. | hexBinary | no |
| 2 | InputSignalMode | This state variable specifies the signal format the DVCR primitive device is currently configured to accept. | string | no |
| 3 | OutputSignalMode | This state variable specifies the signal format the DVCR primitive device is currently configured to transmit. | string | no |
| 4 | CassetteType | This state variable indicates the kind of cassette in the DVCR primitive device. | string | no |
| 5 | WriteProtectState | This state variable indicates the write protect state about the cassette present into the DVCR primitive device. | string | no |
| 6 | RecordingSpeed | This state variable indicates the recording speed for the transport mechanism of the DVCR primitive device. | string | no |
| 7 | TimeCode | This state variable indicates the time code value for the current medium position. | struct | no |
| 8 | TransportState | This state variable indicates the current state of the medium in the transport mechanism. | string | yes |

**Table 9.3-2 InputSignalMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | SD525-60 | SD525-60 | SD525-60 |
| 2 | SDL525-60 | SDL525-60 | SDL525-60 |
| 3 | SD625-50 | SD625-50 | SD625-50 |
| 4 | SDL625-50 | SDL625-50 | SDL625-50 |

**Table 9.3-3 OutputSignalMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | SD525-60 | SD525-60 | SD525-60 |
| 2 | SDL525-60 | SDL525-60 | SDL525-60 |
| 3 | SD625-50 | SD625-50 | SD625-50 |
| 4 | SDL625-50 | SDL625-50 | SDL625-50 |

**Table 9.3-4 CassetteType definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | No cassette | No Cassette | NoCassette |
| 2 | DVCR small cassette | DVCR small cassette | SmallDVCR |
| 3 | DVCR standard cassette | DVCR standard cassette | StandardDVCR |

**Table 9.3-5 WriteProtectState definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | No cassette | No cassette. | NoCassette |
| 2 | OK to record | OK to record on medium. | OK |

| | | | |
|---|---|---|---|
| 3 | Recording inhibited | Recording inhibited. | Inhibited |

**Table 9.3-6 RecordingSpeed definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | standard track pitch | 10 μm track pitch | Standard |
| 2 | narrow track pitch | 6.67 μm track pitch | Narrow |

**Table 9.3-7 TimeCode structure specification**

| | Name | | Data Type | Description |
|---|---|---|---|---|
| 1 | TimeCode | | struct | |
| 2 | | Frame | integer | frame |
| 3 | | Second | integer | second |
| 4 | | Minute | integer | minute |
| 5 | | Hour | integer | hour |

**Table 9.3-8 TransportState definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Eject | No medium is present | Eject |
| 2 | Forward | Playback at normal speed | Forward |
| 3 | Forward Pause | Pause in playback | ForwardPause |
| 4 | Reverse | Playback at normal speed in reverse | Reverse |
| 5 | Reverse Pause | Pause in reverse playback | ReversePause |
| 6 | Slowest Forward | Playback at a special effect speed | SlowestForward |
| 7 | Slow Forward 6 | ^ | SlowForward6 |
| 8 | Slow Forward 5 | \| | SlowForward5 |

| | | | |
|---|---|---|---|
| 9 | Slow Forward 4 | \| slower | SlowForward4 |
| 10 | Slow Forward 3 | \| | SlowForward3 |
| 11 | Slow Forward 2 | \| | SlowForward2 |
| 12 | Slow Forward 1 | \| | SlowForward1 |
| 13 | X1 | Playback at normal speed | X1 |
| 14 | Fast Forward 1 | Playback at a special effect speed | FastForward1 |
| 15 | Fast Forward 2 | \| | FastForward2 |
| 16 | Fast Forward 3 | \| | FastForward3 |
| 17 | Fast Forward 4 | \| faster | FastForward4 |
| 18 | Fast Forward 5 | \| | FastForward5 |
| 19 | Fast Forward 6 | \| | FastForward6 |
| 20 | Fastest Forward | v | FastestForward |
| 21 | SlowestReverse | Playback in reverse at a special effect speed | SlowestReverse |
| 22 | Slow Reverse 6 | ^ | SlowReverse6 |
| 23 | Slow Reverse 5 | \| | SlowReverse5 |
| 24 | Slow Reverse 4 | \| | SlowReverse4 |
| 25 | Slow Reverse 3 | \| slower | SlowReverse3 |
| 26 | Slow Reverse 2 | \| | SlowReverse2 |
| 27 | Slow Reverse 1 | \| | SlowReverse1 |
| 28 | X1 Reverse | Playback at normal speed in reverse | X1Reverse |
| 29 | Fast Reverse 1 | Playback in reverse at a special effect speed | FastReverse1 |
| 30 | Fast Reverse 2 | \| | FastReverse2 |
| 31 | Fast Reverse 3 | \| | FastReverse3 |

| | | | |
|---|---|---|---|
| 32 | Fast Reverse 4 | \| faster | FastReverse4 |
| 33 | Fast Reverse 5 | \| | FastReverse5 |
| 34 | Fast Reverse 6 | \| | FastReverse6 |
| 35 | Fastest Reverse | v | FastestReverse |
| 36 | Next Frame | Playback the next sequential frame or field | Forward |
| 37 | Previous Frame | Playback the previous sequential frame or filed | Forward |
| 38 | Record | Overwrite all signal(s) on the medium | Record |
| 39 | RecordPause | Pause while recording all signal(s) | RecordPause |
| 40 | FastForward | Move the medium away from the beginning of the medium | FastForward |
| 41 | Rewind | Move the medium toward the beginning of the medium | Rewind |
| 42 | Stop | Halt all transport mechanism motion | Stop |

There is no state variable for a camera primitive device that DV devices have.

## 8.4. Services

The services of DV devices are shown below.

**Table 9.4-1. Services offered by DV devices**

| | Service Name | Description |
|---|---|---|
| 1 | GetAVSource | This service is used to inquire the current Audio / Video source plug. |
| 2 | GetIcon | This service is used to obtain an icon image. |

The services of a DVCR primitive device that DV devices have are shown below.

**See also Table 9.4-2. Services offered by DVCR primitive device**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Play | This service is used to request the transport mechanism to playback data previously recorded on the medium or pause in playback. |
| 3 | Stop | This service is used to halt all transport mechanism motion. |
| 4 | FastForward | This service is used to move the medium away from the beginning of the medium. |
| 5 | Rewind | This service is used to move the medium toward the beginning of the medium. |
| 6 | Record | This service is used to request the transport mechanism to overwrite all signal(s) on the medium or pause while recording all signal(s). |
| 7 | SearchATN | This service is used to request the DVCR primitive device to search for a specified absolute track number on the medium. |
| 8 | GetIcon | This service is used to obtain an icon image. |

The details of the services are shown below.

### 8.4.1. GetAVSource

(1)Description

This service is used to inquire the current Audio / Video source plug.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DV/Service/GetAVSource

(3)Input parameter

**Table 9.4.1-1.GetAVSource Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 9.4.1-2.GetAVSource Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | type | string | See also Table 9.4.1-3 |
| 2 | number | integer | type dependent. |

**Table 9.4.1-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 9.4.1-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

### 8.4.2. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DV/Service/GetIcon

(3)Input parameter

**Table9.4.2-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table9.4.2-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image. |
| 2 | base64Data | None | base64Binary | Sets the data of a Base 64-encoded icon image. |

The details of the services of a DVCR primitive device are shown below.

### 8.4.3. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/QueryStateVariable

(3)Input parameter

**Table 9.4.3-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | AbsoluteTrackNumber | AbsoluteTrackNumber | Sets no value |
| 2 | InputSignalMode | InputSignalMode | Sets no value |
| 3 | OutputSignalMode | OutputSignalMode | Sets no value |
| 4 | CassetteType | CassetteType | Sets no value |

| | | | |
|---|---|---|---|
| 5 | WriteProtectState | WriteProtectState | Sets no value |
| 6 | RecordingSpeed | RecordingSpeed | Sets no value |
| 7 | TimeCode | TimeCode | Sets no value |
| 8 | TransportState | TransportState | Sets no value |

(4)Output parameter

**Table 9.4.3-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | AbsoluteTrackNumber | AbsoluteTrackNumber | See also Table 9.3-1 |
| 2 | InputSignalMode | InputSignalMode | See also Table 9.3-2 |
| 3 | OutputSignalMode | OutputSignalMode | See also Table 9.3-3 |
| 4 | CassetteType | CassetteType | See also Table 9.3-4 |
| 5 | WriteProtectState | WriteProtectState | See also Table 9.3-5 |
| 6 | RecordingSpeed | RecordingSpeed | See also Table 9.3-6 |
| 7 | TimeCode | TimeCode | See also Table 9.3-7 |
| 8 | TransportState | TransportState | See also Table 9.3-8 |

### 8.4.4. Play

(1)Description

This service is used to request the transport mechanism to playback data previously recorded on the medium or pause in playback.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Play

(3)Input parameter

**Table9.4.4-1. Play Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | playbackMode | TransportState | string | Playback mode |

**Table9.4.4-2. PlaybackMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Forward | Playback at normal speed | Forward |

| | | | |
|---|---|---|---|
| 2 | Forward Pause | Pause in playback | ForwardPause |
| 3 | Reverse | Playback at normal speed in reverse | Reverse |
| 4 | Reverse Pause | Pause in reverse playback | ReversePause |
| 5 | Slowest Forward | Playback at a special effect speed | SlowestForward |
| 6 | Slow Forward 6 | ^ | SlowForward6 |
| 7 | Slow Forward 5 | \| | SlowForward5 |
| 8 | Slow Forward 4 | \| slower | SlowForward4 |
| 9 | Slow Forward 3 | \| | SlowForward3 |
| 10 | Slow Forward 2 | \| | SlowForward2 |
| 11 | Slow Forward 1 | \| | SlowForward1 |
| 12 | X1 | Playback at normal speed | X1 |
| 13 | Fast Forward 1 | Playback at a special effect speed | FastForward1 |
| 14 | Fast Forward 2 | \| | FastForward2 |
| 15 | Fast Forward 3 | \| | FastForward3 |
| 16 | Fast Forward 4 | \| faster | FastForward4 |
| 17 | Fast Forward 5 | \| | FastForward5 |
| 18 | Fast Forward 6 | \| | FastForward6 |
| 19 | Fastest Forward | v | FastestForward |
| 20 | SlowestReverse | Playback in reverse at a special effect speed | SlowestReverse |
| 21 | Slow Reverse 6 | ^ | SlowReverse6 |
| 22 | Slow Reverse 5 | \| | SlowReverse5 |
| 23 | Slow Reverse 4 | \| | SlowReverse4 |
| 24 | Slow Reverse 3 | \| slower | SlowReverse3 |
| 25 | Slow Reverse 2 | \| | SlowReverse2 |
| 26 | Slow Reverse 1 | \| | SlowReverse1 |
| 27 | X1 Reverse | Playback at normal speed in reverse | X1Reverse |
| 28 | Fast Reverse 1 | Playback in reverse at a special effect speed | FastReverse1 |

| | | | |
|---|---|---|---|
| 29 | Fast Reverse 2 | \| | FastReverse2 |
| 30 | Fast Reverse 3 | \| | FastReverse3 |
| 31 | Fast Reverse 4 | \| faster | FastReverse4 |
| 32 | Fast Reverse 5 | \| | FastReverse5 |
| 33 | Fast Reverse 6 | \| | FastReverse6 |
| 34 | Fastest Reverse | v | FastestReverse |
| 35 | Next Frame | Playback the next sequential frame or field | Forward |
| 36 | Previous Frame | Playback the previous sequential frame or filed | Forward |

(4)Output parameter

None

### 8.4.5. Stop

(1)Description

This service is used to halt all transport mechanism motion.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Stop

(3)Input parameter

None

(4)Output parameter

None

### 8.4.6. FastForward

(1)Description

This service is used to move the medium away from the beginning of the medium.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/FastForward

(3)Input parameter

None

(4)Output parameter

None

### 8.4.7. Rewind

(1)Description

This service is used to move the medium toward the beginning of the medium.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Rewind

(3)Input parameter

None

(4)Output parameter

None

### 8.4.8. Record

(1)Description

This service is used to request the transport mechanism to overwrite all signal(s) on the medium or pause while recording all signal(s).

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Record

(3)Input parameter

**Table9.4.8-1.Record Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | recordingMode | TransporState | string | Recording mode |

**Table9.4.8-2.recordMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Record | Overwrite all signal(s) on the medium | Record |
| 2 | Record Pause | Pause while recording all signal(s) | RecordPause |

(4)Output parameter

None

### 8.4.9. SearchATN

(1)Description

This service is used to request the DVCR primitive device to search for a specified absolute track number on the medium.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/SearchATN

(3)Input parameter

**Table9.4.9-1.SearchATN Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | absoluteTrackNumber | AbsoluteTrackNumber | See also Table 9.3-1 |

(4)Output parameter

None

### 8.4.10. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/GetIcon

(3)Input parameter

**Table9.4.10-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table9.4.10-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

There is no service for a camera primitive device.

## 8.5. Metadata

### 8.5.1. Device Metadata

The metadata template of DV devices is shown below.

This includes the metadata templates of DVCR primitive devices and camera primitive devices.

*Italic letters in red*: differ by the entity of each DV device.

```
<?xml version="1.0"?>
<Device  type="http://www.pucc.jp/2007/09/Device/IEEE1394/DV"  id="global unique ID for this device"
name="short user-friendly title">
  <Specification>
```

```
      <URLBase>base URL for all relative URLs</URLBase>
      <Manufacturer>manufacturer name</Manufacturer>
      <ManufactureDate>date of manufacture</ManufactureDate>
      <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>
    </Specification>
    <StateVariableList>
    </StateVariableList>
    <ServiceList>
      <Service   name="GetAVSource"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DV/Service/GetAVSource"/>
      <Service   name="GetIcon"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/DV/Service/GetIcon"/>
    </ServiceList>
    <PrimitiveDeviceList>
      <PrimitiveDevice   type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR"   id="global unique ID for
this device"   name="short user-friendly title">
        <Specification>
          <URLBase>base URL for all relative URLs</URLBase>
```

```
      <Manufacturer>manufacturer name</Manufacturer>
      <ManufactureDate>date of manufacture</ManufactureDate>
      <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>
    </Specification>
    <StateVariableList>
      <StateVariable   name="AbsoluteTrackNumber"   datatype="hexBinary" sendEvents="no"/>
      <StateVariable   name="InputSignalMode"   datatype="string" sendEvents="no">
        <DefaultValue>SD525-60</DefaultValue>
        <AllowedValueList>
          <AllowedValue>SD525-60</AllowedValue>
          <AllowedValue>SDL525-60</AllowedValue>
          <AllowedValue>SD625-50</AllowedValue>
          <AllowedValue>SDL625-50</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable   name="OutputSignalMode"   datatype="string" sendEvents="no">
        <DefaultValue>SD525-60</DefaultValue>
```

```
        <AllowedValueList>
          <AllowedValue>SD525-60</AllowedValue>
          <AllowedValue>SDL525-60</AllowedValue>
          <AllowedValue>SD625-50</AllowedValue>
          <AllowedValue>SDL625-50</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable  name="CassetteType"  datatype="string" sendEvents="no">
        <DefaultValue>NoCassette</DefaultValue>
        <AllowedValueList>
          <AllowedValue>NoCassette</AllowedValue>
          <AllowedValue>SmallDVCR</AllowedValue>
          <AllowedValue>StandardDVCR</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable  name="WriteProtectState"  datatype="string" sendEvents="no">
        <DefaultValue>NoCassette</DefaultValue>
        <AllowedValueList>
          <AllowedValue>NoCassette</AllowedValue>
          <AllowedValue>OK</AllowedValue>
          <AllowedValue>Inhibited</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable  name="RecordingSpeed"  datatype="string" sendEvents="no">
        <DefaultValue>Standard</DefaultValue>
        <AllowedValueList>
          <AllowedValue>Standard</AllowedValue>
          <AllowedValue>Narrow</AllowedValue>
        </AllowedValueList>
      </StateVariable>
      <StateVariable  name="TimeCode"  datatype="struct" sendEvents="no">
        <StateVariable  name="Frame"  datatype="integer" sendEvents="no"/>
        <StateVariable  name="Second"  datatype="integer" sendEvents="no"/>
        <StateVariable  name="Minute"  datatype="integer" sendEvents="no"/>
```

```
        <StateVariable name="Hour" datatype="integer" sendEvents="no"/>
      </StateVariable>
      <StateVariable name="TransportState" datatype="string" sendEvents="yes">
        <DefaultValue>Stop</DefaultValue>
        <AllowedValueList>
          <AllowedValue>Eject</AllowedValue>
          <AllowedValue>Forward</AllowedValue>
          <AllowedValue>ForwardPause</AllowedValue>
          <AllowedValue>Reverse</AllowedValue>
          <AllowedValue>ReversePause</AllowedValue>
          <AllowedValue>SlowestForward</AllowedValue>
          <AllowedValue>SlowForward6</AllowedValue>
          <AllowedValue>SlowForward5</AllowedValue>
          <AllowedValue>SlowForward4</AllowedValue>
          <AllowedValue>SlowForward3</AllowedValue>
          <AllowedValue>SlowForward2</AllowedValue>
          <AllowedValue>SlowForward1</AllowedValue>
          <AllowedValue>X1</AllowedValue>
          <AllowedValue>FastForward1</AllowedValue>
          <AllowedValue>FastForward2</AllowedValue>
          <AllowedValue>FastForward3</AllowedValue>
          <AllowedValue>FastForward4</AllowedValue>
          <AllowedValue>FastForward5</AllowedValue>
          <AllowedValue>FastForward6</AllowedValue>
          <AllowedValue>FastestForward</AllowedValue>
          <AllowedValue>SlowestReverse</AllowedValue>
          <AllowedValue>SlowReverse6</AllowedValue>
          <AllowedValue>SlowReverse5</AllowedValue>
          <AllowedValue>SlowReverse4</AllowedValue>
          <AllowedValue>SlowReverse3</AllowedValue>
          <AllowedValue>SlowReverse2</AllowedValue>
          <AllowedValue>SlowReverse1</AllowedValue>
          <AllowedValue>X1Reverse</AllowedValue>
          <AllowedValue>FastReverse1</AllowedValue>
```

```
                <AllowedValue>FastReverse2</AllowedValue>
                <AllowedValue>FastReverse3</AllowedValue>
                <AllowedValue>FastReverse4</AllowedValue>
                <AllowedValue>FastReverse5</AllowedValue>
                <AllowedValue>FastReverse6</AllowedValue>
                <AllowedValue>FastestReverse</AllowedValue>
                <AllowedValue>NextFrame</AllowedValue>
                <AllowedValue>PreviousFrame</AllowedValue>
                <AllowedValue>Record</AllowedValue>
                <AllowedValue>RecordPause</AllowedValue>
                <AllowedValue>FastForward</AllowedValue>
                <AllowedValue>Rewind</AllowedValue>
                <AllowedValue>Stop</AllowedValue>
              </AllowedValueList>
            </StateVariable>
          </StateVariableList>
          <ServiceList>
            <Service   name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/QueryStateVariable"/>
            <Service   name="Play"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Play"/>
            <Service   name="Stop"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Stop"/>
            <Service   name="FastForward"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/FastForward"/>
            <Service   name="Rewind"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Rewind"/>
            <Service   name="Record"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Record"/>
            <Service   name="SearchATN"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/SearchATN"/>
            <Service   name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/GetIcon"/>
          </ServiceList>
        </PrimitiveDevice>
```

```
    <PrimitiveDevice  type="http://www.pucc.jp/2007/09/Device/IEEE1394/Camera"  id="global unique ID
for this device"  name="short user-friendly title">
      <Specification>
        <URLBase>base URL for all relative URLs</URLBase>
        <Manufacturer>manufacturer name</Manufacturer>
        <ManufactureDate>date of manufacture</ManufactureDate>
        <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>
      </Specification>
      <StateVariableList/>
      <ServiceList/>
    </PrimitiveDevice>
  </PrimitiveDeviceList>
</Device>
```

### 8.5.2. Service Metadata

The metadata templates of the services that DV devices have are shown below.

(1)GetAVSource Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DV/Service/GetAVSource"
name="GetAVSource">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList>
</Service>
```

(2)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCameraRecorder/Service/GetIcon"
name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services that DVCR primitive devices have are shown below.

(3)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="AbsoluteTrackNumber" relatedStateVariable="AbsoluteTrackNumber"/>
        <Parameter name="InputSignalMode" relatedStateVariable="InputSignalMode"/>
        <Parameter name="OutputSignalMode" relatedStateVariable="OutputSignalMode"/>
        <Parameter name="CassetteType" relatedStateVariable="CassetteType"/>
        <Parameter name="WriteProtectState" relatedStateVariable="WriteProtectState"/>
        <Parameter name="RecordingSpeed" relatedStateVariable="RecordingSpeed"/>
        <Parameter name="TimeCode" relatedStateVariable="TimeCode"/>
        <Parameter name="TransportState" relatedStateVariable="TransportState"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="AbsoluteTrackNumber" relatedStateVariable="AbsoluteTrackNumber"/>
        <Parameter name="InputSignalMode" relatedStateVariable="InputSignalMode"/>
        <Parameter name="OutputSignalMode" relatedStateVariable="OutputSignalMode"/>
        <Parameter name="CassetteType" relatedStateVariable="CassetteType"/>
        <Parameter name="WriteProtectState" relatedStateVariable="WriteProtectState"/>
        <Parameter name="RecordingSpeed" relatedStateVariable="RecordingSpeed"/>
        <Parameter name="TimeCode" relatedStateVariable="TimeCode"/>
        <Parameter name="TransportState" relatedStateVariable="TransportState"/>
    </OutputParameterList>
</Service>
```

(4)Play Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Play" name="Play">
    <InputParameterList>
```

```
<Parameter name="playbackMode" datatype="string">
    <AllowedValueList>
        <AllowedValue>Forward</AllowedValue>
        <AllowedValue>ForwardPause</AllowedValue>
        <AllowedValue>Reverse</AllowedValue>
        <AllowedValue>ReversePause</AllowedValue>
        <AllowedValue>SlowestForward</AllowedValue>
        <AllowedValue>SlowForward6</AllowedValue>
        <AllowedValue>SlowForward5</AllowedValue>
        <AllowedValue>SlowForward4</AllowedValue>
        <AllowedValue>SlowForward3</AllowedValue>
        <AllowedValue>SlowForward2</AllowedValue>
        <AllowedValue>SlowForward1</AllowedValue>
        <AllowedValue>X1</AllowedValue>
        <AllowedValue>FastForward1</AllowedValue>
        <AllowedValue>FastForward2</AllowedValue>
        <AllowedValue>FastForward3</AllowedValue>
        <AllowedValue>FastForward4</AllowedValue>
        <AllowedValue>FastForward5</AllowedValue>
        <AllowedValue>FastForward6</AllowedValue>
        <AllowedValue>FastestForward</AllowedValue>
        <AllowedValue>SlowestReverse</AllowedValue>
        <AllowedValue>SlowReverse6</AllowedValue>
        <AllowedValue>SlowReverse5</AllowedValue>
        <AllowedValue>SlowReverse4</AllowedValue>
        <AllowedValue>SlowReverse3</AllowedValue>
        <AllowedValue>SlowReverse2</AllowedValue>
        <AllowedValue>SlowReverse1</AllowedValue>
        <AllowedValue>X1Reverse</AllowedValue>
        <AllowedValue>FastReverse1</AllowedValue>
        <AllowedValue>FastReverse2</AllowedValue>
        <AllowedValue>FastReverse3</AllowedValue>
        <AllowedValue>FastReverse4</AllowedValue>
        <AllowedValue>FastReverse5</AllowedValue>
```

```
                <AllowedValue>FastReverse6</AllowedValue>
                <AllowedValue>FastestReverse</AllowedValue>
                <AllowedValue>NextFrame</AllowedValue>
                <AllowedValue>PreviousFrame</AllowedValue>
            <AllowedValueList>
        </Parameter>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(5)Stop Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Stop" name="Stop">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(6)FastForward Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/FastForward"
name="FastForward">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(7)Rewind Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Rewind" name="Rewind">
    <InputParameterList/>
    <OutputParameterList/>
</Service>
```

(8)Record Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/Record" name="Record">
    <InputParameterList>
        <Parameter name="recordingMode" datatype="string">
            <AllowedValueList>
                <AllowedValue>Record</AllowedValue>
                <AllowedValue>RecordPause</AllowedValue>
            <AllowedValueList>
        </Parameter>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(9)SearchATN Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/SearchATN"
name="SearchATN">
    <InputParameterList>
        <Parameter name="absoluteTrackNumber" relatedStateVariable="AbsoluteTrackNumber"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(10)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/DVCR/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
```

```
</Service>
```

# 9. AV-HDD Devices

This chapter defines the PUCC metadata specification for AV-HDD devices.

## 9.1. Device Model

AV-HDD devices adopt the device model shown below.

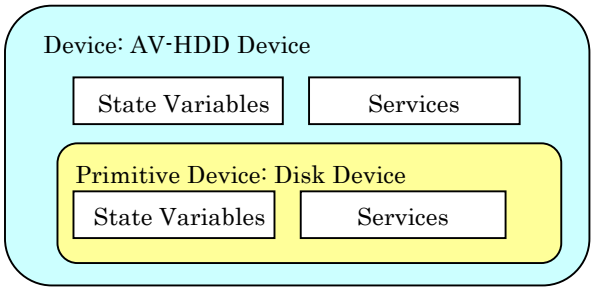


**Figure 10.1-1. AV-HDD device model**

## 9.2. Device Type

The device type identifier of AV-HDD devices are shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD

The device type identifier of a disk primitive device that AV-HDD devices have is shown below.

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc

## 9.3. State Variables

The state variables of AV-HDD devices are shown below.

**Table 10.3-1: AV-HDD devices state variables**

| | State Variable Name | Description | Data Type | Event Generation( Yes/No) |
|---|---|---|---|---|
| 1 | PowerState | Indicates the power status of V-HDD devices. Shown in either of the following 2 values.<br>PowerON<br>PowerOFF | string | yes |
| 2 | SerialBusIsochronousInputPlugs | The number of Serial Bus Isochronous Input Plugs on the primitive device. | integer | no |
| 3 | SerialBusIsochronousOutputPlugs | The number of Serial Bus Isochronous Output Plugs on the primitive device. | integer | no |
| 4 | ExternalInputPlugs | The number of External Input Plugs on the primitive device. | integer | no |
| 5 | ExternalOutputPlugs | The number of External Output Plugs on the primitive device. | integer | no |

**Table 10.3-2 Values indicating the power status**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | PowerON | Power ON status | On |
| 2 | PowerOFF | Power OFF status<br>Note that this status should mean that the device exists on the IEEE1394 bus and is able to receive IEEE 1394 AV/C commands. | Off |

The state variables of a disk primitive device that AV-HDD devices have are shown below.

**Table 10.3-3 State variables of disk primitive devices**

| | State Variable Name | Description | Data Type | Event Generation( Yes/No) | Remarks |
|---|---|---|---|---|---|
| 1 | MaximumNumberOf RecordableContents | The maximum number of recordable contents. | integer | no | — |
| 2 | ErrorCondition | The error condition for the disc primitive device. | string | yes | See also Table 10.3-4 |
| 3 | DestinationPlugState List | The state array of destination plugs. | array | no | See also Table 10.3-5 |
| 4 | SourcePlugStateList | The state array of source plugs. | array | no | See also Table 10.3-10 |
| 5 | NumberOfRootList | The number of Root Lists this device has. However, it has only one Root Contents List. It is prohibited to have a Child List for the sake of interoperability with the Controller. | integer | no | — |
| 6 | RootList | The array of Root Lists. | array | no | See also Table 10.3-11 |

**Table10.3-4 ErrorCondition definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | No Error | No error. The condition of the disc primitive device is normal. | NoError |
| 2 | Drive Error | Drive error – caused by the disc primitive device. | DriveError |

**Table 10.3-5 DestinationPlugStateList definition**

| | Name | Data Type | Description | Remarks |
|---|---|---|---|---|
| 1 | DestinationPlugStateList | array | The state array of destination plugs. | — |
| 2 | DestinationPlugState | struct | The state of destination plugs. | — |
| 3 | DestinationPlugNum ber | hexBinary | The number of destination plugs. | Fixed value. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | | | OperatingMode | string | The operating mode of the destination plugs. | See also Table 10.3-6 |
| 5 | | | AdditionalInformation | string | The value is specific to each of the operating modes. | See also Table 10.3-7 |
| 6 | | | RootListIDOfAssociatedContentID | hexBinary | The Root List ID of the content currently stopped or recorded. | — |
| 7 | | | AssociatedContentID | hexBinary | The ID of the content currently stopped or recorded. | — |
| 8 | | | RelativeIndicator | string | The actual counter of the content. The format is "HH:MM:SS:FF".<br>HH indicates hours.<br>MM indicates minutes.<br>SS indicates seconds.<br>FF indicates frames. | — |
| 9 | | | FrameRateCode | string | The frame rate of MPEG2-TS video streams. | See also Table 10.3-8 |
| 10 | | | BitRateType | string | The bit rate type. | See also Table 10.3-9 |
| 11 | | | VideoSignalBitRate | integer | The bit rate of the video signal recorded by the disc primitive device ($x10^3$bit/sec). | — |

**Table10.3-6 OperatingMode definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Search | The disc primitive device is performing a search on a track which is on this plug. | Search |
| 2 | Record | The incoming stream is being recorded. | Record |
| 3 | Play | The plug is playing an AV content. | Play |
| 4 | Stop | The stream on the plug is currently stopped. | Stop |
| 5 | Suspended | The plug is currently unavailable for some reason. | Suspended |

**Table10.3-7 AdditionalInformation definition**

| | OperatingMode Value | Value | Meaning | Expression in string |
|---|---|---|---|---|
| 1 | Search | Position | Find a position on the media. | Position |
| 2 | | RelativeUnit | Find a specified relative location on the media. | RelativeUnit |
| 3 | Record | Forward | Record at normal speed. | Forward |
| 4 | | ForwardPause | Go into Record pause mode. | ForwardPause |
| 5 | Play | Forward | Playback at normal speed. | Forward |
| 6 | | ForwardPause | Pause in playback. | ForwardPause |
| 7 | Stop | — | No value (empty). | — |
| 8 | Suspended | DiscFull | Disc is full. | DiscFull |
| 9 | | DiscError | Disc error. | DiscError |
| 21 | | Others | Including Power off, No contents, Eliminate all, During format. | Others |

**Table10.3-8 FrameRateCode definition**

| | Value | Meaning |
|---|---|---|
| 1 | 23.97 | 24000/1001 fps |
| 2 | 24 | 24 fps |
| 3 | 25 | 25 fps |
| 4 | 29.97 | 30000/1001 fps |
| 5 | 30 | 30 fps |
| 6 | 50 | 50 fps |
| 7 | 59.94 | 60000/1001 fps |
| 8 | 60 | 60 fps |

**Table10.3-9 BitRateType definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Average | Average bit rate. | Average |
| 2 | Maximum | Maximum bit rate. | Maximum |

**Table10.3-10 SourcePlugStateList definition**

| | Name | Data Type | Description | Remarks |
|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | SourcePlugStateList | | | array | The state array of source plugs. | — |
| 2 | | SourcePlugState | | struct | The state array of source plugs. | — |
| 3 | | | SourcePlugNumber | hexBinary | The number of source plugs. | fixed value |
| 4 | | | OperatingMode | string | The operating mode of source plugs. | See also Table 10.3-6 |
| 5 | | | AdditionalInformation | string | The value is specific to each of the operating modes. | See also Table 10.3-7 |
| 6 | | | RootListIDOfAssociatedContentID | hexBinary | The Root List ID of the content currently stopped or recorded. | — |
| 7 | | | AssociatedContentID | hexBinary | The ID of the content associated with the source plug. | — |
| 8 | | | RelativeIndicator | string | The actual counter of the content. The format is “HH:MM:SS:FF”.<br>HH indicates hours.<br>MM indicates minutes.<br>SS indicates seconds.<br>FF indicates frames. | — |

**Table10.3-11 RootList definition**

| | Name | | | Data Type | Description | Remarks |
|---|---|---|---|---|---|---|
| 1 | RootList | | | array | The array of Root List | — |
| 2 | | Root | | struct | Root | — |
| 3 | | | RootListID | hexBinary | ID of the Root List | fixed value |
| 4 | | | ContentLocked | boolean | The lock status of the root. | — |
| 5 | | | Counter | integer | A target increments the counter value when there was a change within the Root Contents List | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | | | DefaultPlaylistID | hexBinary | ID of the Playlist. | — |
| 7 | | | TotalPlaybackCapacity | long | It shows the total capacity of area that can be played back in the disk. | — |
| 8 | | | MaximumRecordingCapacity | long | It shows the maximum recording capacity of the disk. | — |
| 9 | | | RemainingRecordingCapacity | long | It shows the remaining area of the disk that can be recorded. | — |
| 10 | | | NumberOfContents | integer | It shows the number of contents | — |
| 11 | | | Contents | array | It shows the contents list. | — |
| 12 | | | Content | struct | It shows the content. | See also Table 10.3-12 |

**Table10.3-12 Content definition**

| | Name | Data Type | Description | Remarks |
|---|---|---|---|---|
| 1 | Content | struct | Content | — |
| 2 | ContentID | hexBinary | It shows Content ID. | — |
| 3 | ContentLocked | boolean | The lock status of the content. | — |
| 3 | FrameRateCode | string | Frame rate of MPEG2-TS video stream. | See also Table 10.3-8 |
| 4 | BitRateType | string | The bit rate type. | See also Table 10.3-9 |
| 5 | VideoSignalBitRate | integer | The bit rate of the video signal recorded by the disc primitive device | $10^3$bit/sec. |

| | | | | |
|---|---|---|---|---|
| 6 | FormatIdentifier | hexBinary | This is the ID to determine the AV stream of MPEG2-TS. The ID value defined in ISO/IEC13818-1 is written. The initial value is FFFFFFFF16. | – |
| 7 | NetworkInformation | hexBinary | This is the ID to determine the AV stream of MPEG2-TS. It writes the ID value defined in DVB. When the source device with control function is directing the sink device to record the AV stream with network information, it should write all the fields with valid value. | – |
| 8 | OriginalNetworkID | hexBinary | It shows the original Network ID. | – |
| 9 | TransportStreamID | hexBinary | It shows the transport stream ID. | – |
| 10 | ServiceID | hexBinary | It shows the service ID. | – |
| 11 | CountryCode | hexBinary | It shows the country code. | – |
| 12 | StreamFormatName | string | It indicates Stream format. This data is written in ISO 646. | – |
| 13 | Hours | integer | It shows the size of the content.(the part of hours ) | – |
| 14 | Minutes | integer | It shows the size of the content.(the part of minutes) | – |
| 15 | Seconds | integer | It shows the size of the content.(the part of seconds) | – |

| | | | | | |
|---|---|---|---|---|---|
| 16 | | TimeStamp | dateTime | The time of the creation of this content. | – |
| 17 | | ProgramStartingDateTime | dateTime | The data of the content information of starting date & time, not the time of the content generation. | – |
| 18 | | ProgramDuration | duration | The data of the content information of duration, not duration held by the content. | – |
| 19 | | ParentalRating | boolean | It specifies whether the program itself is parentally locked or not. | – |
| 20 | | ProgramModes | string | The data whether the content was broadcast in HD mode or SD mode | “HD” “SD” |
| 21 | | Replayed | boolean | The data whether the content has been replayed or not. | – |
| 22 | | MaximumNameLength | integer | The maximum number of letters for the name of the content accepted by the disc primitive device. | fixed value |
| 23 | | Name | string | The name of the content. | – |
| 24 | | MaximumDescriptionLength | integer | The maximum number of letters for the description of the content accepted by the disc primitive device. | fixed value |
| 25 | | Description | string | The description about the content. | – |

## 9.4. Services

The services that AV-HDD devices have are shown below.

**Table10.4-1. Services offered by AV-HDD devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | Power | This service is used to control the Power ON/OFF. |
| 3 | SetInputConnection | This service is used to establish an internal input connection between an input plug or another primitive device and the disc primitive device. |
| 4 | SetOutputConnection | This service is used to establish an internal output connection between the disc primitive device and an output plug or another primitive device. |
| 5 | GetInputConnection | This service is used to inquire the current state of the input connection between an input plug or another primitive device and the disc primitive device. |
| 6 | GetOutputConnection | This service is used to inquire the current state of the output connections between the disc primitive device and an output plug or another primitive device. |
| 7 | GetIcon | This service is used to obtain an icon image. |

The details of each service are shown below.

### 9.4.1. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/QueryStateVariable

(3)Input parameter

**Table 10.4.1-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | PowerState | PowerState | Sets no value |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | Sets no value |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | Sets no value |
| 4 | ExternalInputPlugs | ExternalInputPlugs | Sets no value |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | Sets no value |

(4)Output parameter

**Table 10.4.1-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | powerState | PowerState | See also Table 10.3-1 |
| 2 | SerialBusIsochronousInputPlugs | SerialBusIsochronousInputPlugs | See also Table 10.3-1 |
| 3 | SerialBusIsochronousOutputPlugs | SerialBusIsochronousOutputPlugs | See also Table 10.3-1 |
| 4 | ExternalInputPlugs | ExternalInputPlugs | See also Table 10.3-1 |
| 5 | ExternalOutputPlugs | ExternalOutputPlugs | See also Table 10.3-1 |

### 9.4.2. Power

(1)Description

This service is used to control the Power ON/OFF.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/Power

(3)Input parameter

**Table 10.4.2-1.Power Service Input parameter**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | powerState | PowerState | See also Table 10.3-1 |

(4)Output parameter

None

### 9.4.3. SetInputConnection

(1)Description

This service is used to establish an internal input connection between an input plug or another primitive device and the disc primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetInputConnection.

(3)Input parameter

**Table 10.4.3-1.SetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 10.4.3-2 |
| 2 | number | integer | type dependent. |

**Table 10.4.3-2.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 10.4.3-3.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

(4)Output parameter

None

### 9.4.4. SetOutputConnection

(1)Description

This service is used to establish an internal output connection between the disc primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetOutputConnection.

(3)Input parameter

**Table 10.4.4-1.SetOutputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 10.4.4-2 |
| 2 | number | integer | type dependent. |

**Table 10.4.4-2.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 10.4.4-3.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

(4)Output parameter

None

### 9.4.5. GetInputConnection

(1)Description

This service is used to inquire the current state of the input connection between an input plug or another primitive device and the disc primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetInputConnection

(3)Input parameter

**Table 10.4.5-1.GetInputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 10.4.5-2.GetInputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 10.4.5-3 |
| 2 | number | integer | type dependent. |

**Table 10.4.5-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug | SerialBusIsochronousInputPlug |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug | SerialBusAsynchronousInputPlug |
| 4 | General Bus Input Plug | General Bus Input Plug | GeneralBusInputPlug |
| 5 | External Input Plug | External Input Plug | ExternalInputPlug |

**Table 10.4.5-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Input Plug | Serial Bus Isochronous Input Plug number | 0-31 |
| 3 | Serial Bus Asynchronous Input Plug | Serial Bus Asynchronous Input Plug number | 0-31 |
| 4 | General Bus Input Plug | General Bus Input Plug number | 0-31 |
| 5 | External Input Plug | External Input Plug number | 0-31 |

### 9.4.6. GetOutputConnection

(1)Description

This service is used to inquire the current state of the output connections between the disc primitive device and an output plug or another primitive device.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetOutputConnection

(3)Input parameter

**Table 10.4.6-1.GetOutputConnection Service Input parameter**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | primitiveDeviceID | integer | — |

(4)Output parameter

**Table 10.4.6-2.GetOutputConnection Service Output parameters**

| | Parameter | Data Type | Remarks |
|---|---|---|---|
| 1 | type | string | See also Table 10.4.6-3 |
| 2 | number | integer | Type dependent. |

**Table 10.4.6-3.Type definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Primitive device | Primitive device | PrimitiveDevice |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug | SerialBusIsochronousOutputPlug |
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug | SerialBusAsynchronousOutputPlug |
| 4 | General Bus Output Plug | General Bus Output Plug | GeneralBusOutputPlug |
| 5 | External Output Plug | External Output Plug | ExternalOutputPlug |

**Table 10.4.6-4.Number definition**

| | type parameter | Meaning | Remarks |
|---|---|---|---|
| 1 | Primitive device | Device id of the primitive device | — |
| 2 | Serial Bus Isochronous Output Plug | Serial Bus Isochronous Output Plug number | 0-31 |

| | | | |
|---|---|---|---|
| 3 | Serial Bus Asynchronous Output Plug | Serial Bus Asynchronous Output Plug number | 0-31 |
| 4 | General Bus Output Plug | General Bus Output Plug number | 0-31 |
| 5 | External Output Plug | External Output Plug number | 0-31 |

### 9.4.7. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetIcon

(3)Input parameter

**Table10.4.7-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table10.4.7-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

The services of a disk primitive device that AV-HDD devices have are shown below.

**Table10.4-4. Services offered by AV-HDD devices**

| | Service Name | Description |
|---|---|---|
| 1 | QueryStateVariable | This service is used to query some state variables. |
| 2 | GetDestinationPlugState | This service is used to query the specified destination plug state. |
| 3 | GetSourcePlugState | This service is used to query the specified source plug state. |
| 4 | GetContentsInformation | This service is used to get the contents information on the specified root list. |
| 5 | UpdateContentInformation | This service is used to update the specified information of the content. |
| 6 | ResetPlugConfiguration | This service is used to reset to the default configuration of the source plug or the destination plug in the disc primitive device for a recording or playback operation. |
| 7 | SetPlugConfiguration | This service is used to set a specified configuration to the destination plug in the disc primitive device for a recording operation. |
| 8 | EraseAll | This service is used to erase all content from the disc. |
| 9 | Erase | This service is used to erase the specified content from the disc. |
| 10 | Lock | This service is used to lock the specified AV contents. |
| 11 | Unlock | This service is used to unlock the specified AV contents. |
| 12 | Play | This service is used to play back the AV content. |
| 13 | Record | This service is used to record an AV stream onto the disc and generate AV content. |
| 14 | SearchPosition | This service is used to find a position on the media. |
| 15 | SearchRelativeUnit | This service is used to find a specified relative location on the media. |
| 16 | SetSourcePlugAssociation | This service is used to associate a certain list or object with source plug for playback operation. |
| 17 | SetDestinationPlugAssociation | This service is used to associate a certain list or object with destination plug for recording operation. |
| 18 | Stop | This service is used to stop the flow of data on a specified source or destination plug. |
| 19 | GetIcon | This service is used to query the data of the icon. |

The details of each service are shown below.

### 9.4.8. QueryStateVariable

(1)Description

This service is used to query some state variables.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/QueryStateVariable

(3)Input parameter

**Table 10.4.8-1.QueryStateVariable Service Input parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | MaximumNumberOfRecordableContents | MaximumNumberOfRecordableContents | Sets no value |
| 2 | ErrorCondition | ErrorCondition | Sets no value |
| 3 | DestinationPlugStateList | DestinationPlugStateList | Sets no value |
| 4 | SourcePlugStateList | SourcePlugStateList | Sets no value |
| 5 | NumberOfRootList | NumberOfRootList | Sets no value |
| 6 | RootList | RootList | Sets no value |

(4)Output parameter

**Table 10.4.8-2.QueryStateVariable Service Output parameters**

| | Parameter | Relevant State Variables | Remarks |
|---|---|---|---|
| 1 | MaximumNumberOfRecordableContents | MaximumNumberOfRecordableContents | See also Table 10.3-3 |
| 2 | ErrorCondition | ErrorCondition | See also Table 10.3-3 |
| 3 | DestinationPlugStateList | DestinationPlugStateList | See also Table 10.3-3 |
| 4 | SourcePlugStateList | SourcePlugStateList | See also Table 10.3-3 |
| 5 | NumberOfRootList | NumberOfRootList | See also Table 10.3-3 |

| | | | |
|---|---|---|---|
| 6 | RootList | RootList | See also Table 10.3-3 |

### 9.4.9. GetDestinationPlugState

(1)Description

This service is used to get the specified destination plug state.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetDestinationPlugState

(3)Input parameter

**Table10.4.9-1.GetDestinationPlugState Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | destinationPlugNumber | DestinationPlugNumber included in DestinationPlugState included in DestinationPlugStateList. | hexBinary | The number of destination plugs. |

(4)Output parameter

**Table10.4.9-2 GetDestinationPlugState Service Output parameter**

| | Name | Relevant State Variables | Data Type | Description |
|---|---|---|---|---|
| 1 | destinationPlugState | DestinationPlugState included in DestinationPlugState List | struct | The requested destination plug state. |

### 9.4.10. GetSourcePlugState

(1)Description

This service is used to get the specified source plug state.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetSourcePlugState

(3)Input parameter

**Table10.4.10-1.GetSourcePlugState Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | sourcePlugNumber | PlugNumber included in SourcePlugState included in SourcePlugStateList. | hexBinary | The number of source plugs. |

(4)Output parameter

**Table10.4.10-2 GetSourcePlugState Service Output parameter**

| | Name | Relevant State Variables | Data Type | Description |
|---|---|---|---|---|
| 1 | sourcePlugState | SourcePlugState included in SourcePlugStateList | struct | The requested source plug state. |

### 9.4.11. GetContentsInformation

(1)Description

This service is used to get the contents information on the specified root list.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetContentsInformation.

(3)Input parameter

**Table10.4.11-1.GetContentsInformation Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | rootListID | RootListID included in Root included in RootList. | hexBinary | ID of the Root List. |

(4)Output parameter

**Table10.4.11-2 GetContentsInformation Service Output parameter**

| | Name | Relevant State Variables | Data Type | Description |
|---|---|---|---|---|
| 1 | root | Root included in RootList. | struct | The requested root. |

### 9.4.12. UpdateContentInformation

(1)Description

This service is used to update the specified content information.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/UpdateContentInformation.

(3)Input parameter

**Table10.4.12-1.UpdateContentInformation Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | rootListID | RootListID included in Root included in RootList. | hexBinary | ID of the Root List. |
| 2 | contentID | ContentID included in Content included in Contents. | hexBinary | ID of the Content. Table10.3-12 |
| 3 | formatIdentifier | FormatIdentifier included in Content included in Contents. | integer | Table10.3-12 |

| | | | | |
|---|---|---|---|---|
| 4 | networkInformation | NetworkInformation included in Content included in Contents. | integer | Table10.3-12 |
| 5 | originalNetworkID | OriginalNetworkID included in Content included in Contents. | integer | Table10.3-12 |
| 6 | transportStreamID | TransportStreamID included in Content included in Contents. | integer | Table10.3-12 |
| 7 | serviceID | ServiceID included in Content included in Contents. | integer | Table10.3-12 |
| 8 | countryCode | CountryCode included in Content included in Contents. | long | Table10.3-12 |
| 9 | streamFormatName | StreamFormatName included in Content included in Contents. | string | Table10.3-12 |
| 10 | hours | Hours included in Content included in Contents. | integer | Table10.3-12 |
| 11 | minutes | Minutes included in Content included in Contents. | integer | Table10.3-12 |
| 12 | seconds | Seconds included in Content included in Contents. | integer | Table10.3-12 |
| 13 | timeStamp | TimeStamp included in Content included in Contents. | dateTime | Table10.3-12 |
| 14 | programStartingDateTime | ProgramStartingDateTime included in Content included in Contents. | dateTime | Table10.3-12 |
| 15 | programDuration | ProgramDuration included in Content included in Contents. | duration | Table10.3-12 |

| | | | | |
|---|---|---|---|---|
| 16 | parentalRating | ParentalRating included in Content included in Contents. | boolean | Table10.3-12 |
| 17 | programModes | ProgramModes included in Content included in Contents. | string | Table10.3-12 |
| 18 | replayed | Replayed included in Content included in Contents. | boolean | Table10.3-12 |
| 19 | maximumNameLength | MaximumNameLength included in Content included in Contents. | integer | Table10.3-12 |
| 20 | name | Name included in Content included in Contents. | string | Table10.3-12 |
| 21 | maximumDescriptionLength | MaximumDescriptionLength included in Content included in Contents. | integer | Table10.3-12 |
| 22 | description | Description included in Content included in Contents. | string | Table10.3-12 |

(4)Output parameter

**Table10.4.12-2 UpdateContentInformation Service Output parameter**

| | Name | Relevant State Variables | Data Type | Description |
|---|---|---|---|---|
| 1 | result | None | string | — |

**Table 10.4.12-3 Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Update process is success. | Success |
| 2 | Failure | Update process is failure. | Failure |

### 9.4.13. ResetPlugConfigration

(1)Description

This service is used to reset the signal format configuration of the source plug and the destination plug in the disc primitive device for a recording or playback operation.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/ResetPlugConfiguration

(3)Input parameter

**Table10.4.13-1.ResetPlugConfiguration Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | plugType | None | string | See also Table 10.4.13-2 |
| 2 | plugNumber | None | hexBinary | The number of source or destination plug. |

**Table10.4.13-2. PlugType definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | source plug | source plug | Source |
| 2 | destination plug | destination plug | Destination |

(4)Output parameter

**Table10.4.13-3.ResetPlugConfiguration Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.13-4 |

**Table10.4.13-4.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | Bandwidth Exceeded | No capacity to support any mode streams | BandwidthExceeded |

| | | | |
|---|---|---|---|
| 3 | No Media | There is no media in the subunit. | NoMedia |
| 4 | Disc Error | Error caused by disc. | DiscError |
| 5 | Media Problem | The disc may not be recordable. | MediaProblem |
| 6 | Importing | Currently in the process of importing a disc. | Importing |
| 7 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 8 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 9 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 10 | Playing | Busy playing. | Playing |
| 11 | Search | Busy searching. | Search |
| 12 | Recording | Busy recording. | Recording |
| 13 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 14 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 15 | Power Off | The disc subunit is powered off. | PowerOff |
| 16 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 17 | Transition | The disc subunit is in transition. | Transition |
| 18 | Unknown | An unknown error occurred. | Unknown |

### 9.4.14. SetPlugConfigration

(1)Description

This service is used to set a specified configuration to the destination plug.

This service is for only destination plugs.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetPlugConfiguration

(3)Input parameter

**Table10.4.14-1.SetPlugConfiguration Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | destinationPlugNumber | None | hexBinary | The number of destination plug. |
| 2 | frameRateCode | FrameRateCode included in DestinationPlugStateList | double | See also Table 10.3-8 |
| 3 | bitRateType | bitrateType included in DestinationPlugStateList | string | See also Table 10.3-9 |
| 4 | videoSignalBitrate | videoSignalBitrate included in DestinationPlugStateList | integer | The bit rate of the video signal recorded by the disc primitive device |

(4)Output parameter

**Table10.4.14-3.SetPlugConfiguration Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.14-4 |

**Table10.4.14-4. Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | Bandwidth Exceeded | No capacity to support any mode streams | BandwidthExceeded |
| 3 | No Media | There is no media in the subunit. | NoMedia |

| | | | |
|---|---|---|---|
| 4 | Disc Error | Error caused by disc. | DiscError |
| 5 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 6 | Importing | Currently in the process of importing a disc. | Importing |
| 7 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 8 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 9 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 10 | Playing | Busy playing. | Playing |
| 11 | Search | Busy searching. | Search |
| 12 | Recording | Busy recording. | Recording |
| 13 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 14 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 15 | Power Off | The disc subunit is powered off. | PowerOff |
| 16 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 17 | Transition | The disc subunit is in transition. | Transition |
| 18 | Unknown | An unknown error occurred. | Unknown |

### 9.4.15. EraseAll

(1)Description

This service is used to erase all content from the disc.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/EraseAll

(3)Input parameter

None

(4)Output parameter

**Table10.4.15-1.EraseAll Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.12-2 |

**Table10.4.15-2. Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Problem | The disc may not be recordable. | MediaProblem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | Playing | Busy playing. | Playing |
| 10 | Search | Busy searching. | Search |
| 11 | Recording | Busy recording. | Recording |
| 12 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 13 | Invalid Position | The specified position is invalid. | InvalidPosition |

| | | | |
|---|---|---|---|
| 14 | Invalid List or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 15 | Contents Locked | The specified AV object is locked. | ContentsLocked |
| 16 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 17 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 18 | Power Off | The disc subunit is powered off. | PowerOff |
| 19 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 20 | Transition | The disc subunit is in transition. | Transition |
| 21 | Unknown | An unknown error occurred. | Unknown |

### 9.4.16. Erase

(1)Description

This service is used to erase the specified content from the disc.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Erase

(3)Input parameter

**Table10.4.16-1.Erase Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | contentID | ContentID | hexBinary | ID of the AV content |

(4)Output parameter

**Table10.4.16-2.Erase Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.16-3 |

**Table10.4.16-3.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | Playing | Busy playing. | Playing |
| 10 | Search | Busy searching. | Search |
| 11 | Recording | Busy recording. | Recording |
| 12 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 13 | Invalid Position | The specified position is invalid. | InvalidPosition |
| 14 | Invalid List or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 15 | Contents Locked | The specified AV object is locked. | ContentsLocked |
| 16 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |

| | | | |
|---|---|---|---|
| 17 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 18 | Power Off | The disc subunit is powered off. | PowerOff |
| 19 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 20 | Transition | The disc subunit is in transition. | Transition |
| 21 | Unknown | An unknown error occurred. | Unknown |

### 9.4.17. Lock

(1)Description

This service is used to lock the specified AV contents.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Lock

(3)Input parameter

**Table10.4.17-1.Lock Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | contentID | ContentID | hexBinary | ID of the AV content |

(4)Output parameter

**Table10.4.17-2.Lock Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.17-3 |

**Table10.4.17-3. Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 3 | Contents Locked | The specified AV object is locked. | ContentsLocked |
| 4 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 5 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 6 | Power Off | The disc subunit is powered off. | PowerOff |
| 7 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 8 | Transition | The disc subunit is in transition. | Transition |
| 9 | Unknown | An unknown error occurred. | Unknown |

### 9.4.18. Unlock

(1)Description

This service is used to unlock the specified AV contents.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Unlock

(3)Input parameter

**Table10.4.18-1.Unlock Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | contentID | None | hexBinary | ID of the AV content |

(4)Output parameter

**Table10.4.18-2.Unlock Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.18-3 |

**Table10.4.18-3.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 3 | Contents Locked | The specified AV object is locked. | ContentsLocked |
| 4 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 5 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 6 | Power Off | The disc subunit is powered off. | PowerOff |
| 7 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 8 | Transition | The disc subunit is in transition. | Transition |
| 9 | Unknown | An unknown error occurred. | Unknown |

### 9.4.19. Play

(1)Description

This service is used to play back the AV content.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Play

(3)Input parameter

**Table10.4.19-1.Play Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | playbackMode | None | string | See also Table 6.4.19-2 |
| 2 | sourcePlugNumber | None | hexBinary | The number of source plug. |

**Table10.4.19-2.PlaybackMode definition**

| | Value | Meaning |
|---|---|---|
| 1 | Forward | Playback at normal speed. |
| 2 | ForwardPause | Pause in playback. |

(4)Output parameter

**Table10.4.19-3.Play Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.19-4 |

**Table10.4.19-4.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |

| | | | |
|---|---|---|---|
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | Playing | Busy playing. | Playing |
| 10 | Search | Busy searching. | Search |
| 11 | Recording | Busy recording. | Recording |
| 12 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 13 | No Plug Association | The plug is not associated. | NoPlugAssociation |
| 14 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 15 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 16 | Power Off | The disc subunit is powered off. | PowerOff |
| 17 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 18 | Transition | The disc subunit is in transition. | Transition |
| 19 | Unknown | An unknown error occurred. | Unknown |

### 9.4.20. Record

(1)Description

This service is used to record an AV stream onto the disc and generate AV content.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Record

(3)Input parameter

**Table10.4.20-1.Record Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | recordState | None | string | See also Table 6.4.20-2 |

| | | | | |
|---|---|---|---|---|
| 2 | destinationPlugNumber | None | hexBinary | The number of destination plug. |

**Table10.4.20-2.RecordState definition**

| | Value | Meaning |
|---|---|---|
| 1 | Forward | Record at normal speed. |
| 2 | ForwardPause | Go into Record pause mode. |

(4)Output parameter

**Table10.4.20-3.Record Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.20-4 |

**Table10.4.20-4.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | D-IN Unlocked | Not locked with the input signal. | D-INUnlocked |
| 3 | Can't Copy | The copy prohibit flag of input signal is on. | CantCopy |
| 4 | Bandwidth Exceeded | No capacity to support any more streams. | BandwidthExceeded |
| 5 | No Media | There is no media in the subunit. | NoMedia |
| 6 | Disc Error | Error caused by disc. | DiscError |
| 7 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 8 | Importing | Currently in the process of importing a disc. | Importing |
| 9 | Exporting | Currently in the process of exporting a disc. | Exporting |

| | | | |
|---|---|---|---|
| 10 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 11 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 12 | Playing | Busy playing. | Playing |
| 13 | Search | Busy searching. | Search |
| 14 | Recording | Busy recording. | Recording |
| 15 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 16 | Maximum Number of Objects | The number of AV objects reaches the maximum number of objects. | MaximumNumberOfObjects |
| 17 | Invalid Position | The specified position is invalid. | InvalidPosition |
| 18 | No Plug Association | The plug is not associated. | NoPlugAssociation |
| 19 | Invalid List or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 20 | Contents Locked | The specified AV object is locked. | ContentsLocked |
| 21 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 22 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 23 | Power Off | The disc subunit is powered off. | PowerOff |
| 24 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 25 | Transition | The disc subunit is in transition. | Transition |
| 26 | Unknown | An unknown error occurred. | Unknown |

### 9.4.21. SearchPosition

(1)Description

This service is used to find a position on the media.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchPosition

(3)Input parameter

**Table10.4.21-1.SearchPosition Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | sourcePlugNumber | None | hexBinary | The number of source plug. |
| 2 | contentPositionNumber | None | hexBinary | — |
| 3 | hours | None | integer | — |
| 4 | minutes | None | integer | — |
| 5 | seconds | None | integer | — |
| 6 | frames | None | integer | — |

(4)Output parameter

**Table10.4.21-2.SearchPosition Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.21-3 |

**Table10.4.21-3.result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |

| | | | |
|---|---|---|---|
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 11 | Invalid Position | The specified position is invalid. | InvalidPosition |
| 12 | No Plug Association | The plug is not associated. | NoPlugAssociation |
| 13 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 14 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 15 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 16 | Power Off | The disc subunit is powered off. | PowerOff |
| 17 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 18 | Transition | The disc subunit is in transition. | Transition |
| 19 | Unknown | An unknown error occurred. | Unknown |

### 9.4.22. SearchRelativeUnit

(1)Description

This service is used to find a specified relative location on the media.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchRelativeUnit

(3)Input parameter

**Table10.4.22-1.SearchRelativeUnit Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | measurementUnit | None | string | See also Table 10.4.22-2 |
| 2 | direction | None | string | See also Table 10.4.22-3 |
| 3 | count | None | integer | The count field is multiplier for the measurementUnit. |

**Table10.4.22-2.MeasurementUnit definition**

| | Value | Meaning |
|---|---|---|
| 1 | Hour | An hour boundary. |
| 2 | Minute | A minute boundary. |
| 3 | Second | A second boundary. |

**Table10.4.22-3.Direction definition**

| | Value | Meaning |
|---|---|---|
| 1 | Forward | Search forward from the position. |
| 2 | Backward | Search backward from the position. |

(4)Output parameter

**Table10.4.22-4.SearchRelativeUnit Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.22-5 |

**Table10.4.22-5.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProblem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | No AV Object | There is no AV object to operate with. | NoAVObject |
| 11 | Invalid Position | The specified position is invalid. | InvalidPosition |
| 12 | No Plug Association | The plug is not associated. | NoPlugAssociation |
| 13 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 14 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 15 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 16 | Power Off | The disc subunit is powered off. | PowerOff |

| | | | |
|---|---|---|---|
| 17 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 18 | Transition | The disc subunit is in transition. | Transition |
| 19 | Unknown | An unknown error occurred. | Unknown |

### 9.4.23. SetSourcePlugAssociation

(1)Description

This service is used to associate a certain AV content with source plug for playback operations.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetSourcePlugAssociation

(3)Input parameter

**Table10.4.23-1.SetSourcePlugAssociation Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | sourcePlugNumber | None | hexBinary | The number of source plug. |
| 2 | contentID | None | hexBinary | ID of the AV content |

(4)Output parameter

**Table10.4.23-2.SetSourcePlugAssociation Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.23-3 |

**Table10.4.23-3.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |

| | | | |
|---|---|---|---|
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProbrem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |
| 9 | Playing | Busy playing. | Playing |
| 10 | Search | Busy searching. | Search |
| 11 | Recording | Busy Recording. | Recording |
| 12 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 13 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 14 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 15 | Power Off | The disc subunit is powered off. | PowerOff |
| 16 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 17 | Transition | The disc subunit is in transition. | Transition |
| 18 | Unknown | An unknown error occurred. | Unknown |

### 9.4.24. SetDestinationPlugAssociation

(1)Description

This service is used to associate certain AV content with destination plug for recording operations.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetDestinationPlugAssociation

(3)Input parameter

**Table10.4.24-1.SetDestinationPlugAssociation Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | destinationPlugNumber | None | hexBinary | The number of destination plug. |

(4)Output parameter

**Table10.4.24-2.SetDestinationPlugAssociation Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.21-3 |

**Table10.4.24-3.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | No Media | There is no media in the subunit. | NoMedia |
| 3 | Disc Error | Error caused by disc. | DiscError |
| 4 | Media Probrem | The disc may not be recordable. | MediaProbrem |
| 5 | Importing | Currently in the process of importing a disc. | Importing |
| 6 | Exporting | Currently in the process of exporting a disc. | Exporting |
| 7 | Reading TOC | Busy reading the TOC of the disc. | ReadingTOC |
| 8 | Writing TOC | Busy writing TOC data to the disc. | WritingTOC |

| | | | |
|---|---|---|---|
| 9 | Playing | Busy playing. | Playing |
| 10 | Search | Busy searching. | Search |
| 11 | Recording | Busy Recording. | Recording |
| 12 | Invalid List Or Entry | The specified list or entry does not exist. | InvalidListOrEntry |
| 13 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 14 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 15 | Power Off | The disc subunit is powered off. | PowerOff |
| 16 | Subunit Busy | Busy with another operation. | SubunitBusy |
| 17 | Transition | The disc subunit is in transition. | Transition |
| 18 | Unknown | An unknown error occurred. | Unknown |

### 9.4.25. Stop

(1)Description

This service is used to stop the flow of data on a specified source or destination plug.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Stop

(3)Input parameter

**Table10.4.25-1.Stop Service Input parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | plugType | None | string | See also Table 6.4.25-2 |

| | | | | |
|---|---|---|---|---|
| 2 | plugNumber | None | hexBinary | The number of source or destination plug. |

**Table10.4.25-2.PlugType definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Source | source plug | Source |
| 2 | Destination | destination plug | Destination |

(4)Output parameter

**Table10.4.25-3.Stop Service Output parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | result | None | string | See also Table 10.4.25-4 |

**Table10.4.25-4.Result definition**

| | Value | Meaning | Expression in string |
|---|---|---|---|
| 1 | Success | Successful Completion. | Success |
| 2 | Invalid Parameter | Invalid parameter in the command frame. | InvalidParameter |
| 3 | Reserved Subunit | The disc subunit is reserved. | ReservedSubunit |
| 4 | Power Off | The disc subunit is powered off. | PowerOff |
| 5 | Unknown | An unknown error occurred. | Unknown |

### 9.4.26. GetIcon

(1)Description

This service is used to obtain an icon image.

(2) Service Type Identifier

http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetIcon

(3)Input parameter

**Table10.4.26-1.GetIcon Service Input parameter**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | url | None | string | Sets the URL of an icon image. |

The Input parameterurl is set to the URL (urlelement) of the arbitrary icon data (Iconelement) set for the static data (Specificationelement) of the metadata.

(4)Output parameter

**Table10.4.26-2.GetIcon Service Output parameters**

| | Parameter | Relevant State Variables | Data Type | Remarks |
|---|---|---|---|---|
| 1 | mimeType | None | string | Sets the MIME type of an icon image |
| 2 | base64Data | None | base64Binary | Sets the data of a Base64-encoded icon image |

## 9.5. Metadata

### 9.5.1. Device Metadata

The metadata template of AV-HDD devices is shown below.

This includes the metadata template of disk primitive devices.

*Italic letters in red*: differ by the entity of each AV-HDD device.

```
<?xml version="1.0"?>
<Device type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD" id="global unique ID for this device" name="short user-friendly title">
  <Specification>
    <URLBase>base URL for all relative URLs</URLBase>
    <Manufacturer>manufacturer name</Manufacturer>
    <ManufactureDate>date of manufacture</ManufactureDate>
```

```
    <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>
  </Specification>
  <StateVariableList>
    <StateVariable  name="PowerState"  datatype="string"  sendEvents="yes">
      <DefaultValue>Off</DefaultValue>
      <AllowedValueList>
        <AllowedValue>On</AllowedValue>
        <AllowedValue>Off</AllowedValue>
      </AllowedValueList>
    </StateVariable>
    <StateVariable  name="SerialBusIsochronousInputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="SerialBusIsochronousOutputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="ExternalInputPlugs"  datatype="integer"  sendEvents="no" />
    <StateVariable  name="ExpernalOutputPlugs"  datatype="integer"  sendEvents="no" />
  </StateVariableList>
  <ServiceList>
    <Service  name="QueryStateVariable"
```

```
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/QueryStateVariable"/>
      <Service    name="Power"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/Power"/>
      <Service    name="SetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetInputConnection"/>
      <Service    name="SetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetOutputConnection"/>
      <Service    name="GetInputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetInputConnection"/>
      <Service    name="GetOutputConnection"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetOutputConnection"/>
      <Service    name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetIcon"/>
   </ServiceList>
   <PrimitiveDeviceList>
      <PrimitiveDevice    type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc"    id="global unique ID for
this device"    name="short user-friendly title">
         <Specification>
            <URLBase>base URL for all relative URLs</URLBase>
            <Manufacturer>manufacturer name</Manufacturer>
            <ManufactureDate>date of manufacture</ManufactureDate>
            <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>
      </Specification>
      <StateVariableList>
        <StateVariable name="MaximumNumberOfRecordableContents" datatype="integer"
sendEvents="no" />
        <StateVariable name="ErrorCondition" datatype="string" sendEvents="yes">
          <DefaultValue>NoError</DefaultValue>
          <AllowedValueList>
            <AllowedValue>NoError</AllowedValue>
            <AllowedValue>DriveError</AllowedValue>
          </AllowedValueList>
        </StateVariable>
        <StateVariable name="DestinationPlugStateList" datatype="array" sendEvents="no">
          <StateVariable name="DestinationPlugState" datatype="struct" sendEvents="no">
            <StateVariable name="DestinationPlugNumber" datatype="hexBinary" sendEvents="no" />
            <StateVariable name="OperatingMode" datatype="string" sendEvents="no">
              <AllowedValueList>
                <AllowedValue>Search</AllowedValue>
                <AllowedValue>Record</AllowedValue>
                <AllowedValue>Play</AllowedValue>
                <AllowedValue>Stop</AllowedValue>
                <AllowedValue>Suspended</AllowedValue>
              </AllowedValueList>
            </StateVariable>
            <StateVariable name="AdditionalInformation" datatype="string" sendEvents="no">
              <AllowedValueList>
                <AllowedValue>Position</AllowedValue>
                <AllowedValue>RelativeUnit</AllowedValue>
                <AllowedValue>Forward</AllowedValue>
                <AllowedValue>ForwardPause</AllowedValue>
```

```
                    <AllowedValue>DiscFull</AllowedValue>
                    <AllowedValue>DiscError</AllowedValue>
                    <AllowedValue>Others</AllowedValue>
                  </AllowedValueList>
                </StateVariable>
                <StateVariable  name="RootListIDOfAssociatedContentID"  datatype="hexBinary"
sendEvents="no" />
                <StateVariable  name="AssociatedContentID"  datatype="hexBinary"  sendEvents="no" />
                <StateVariable  name="RelativeIndicator"  datatype="string"  sendEvents="no" />
                <StateVariable  name="FrameRateCode"  datatype="string"  sendEvents="no">
                  <AllowedValueList>
                    <AllowedValue>23.97</AllowedValue>
                    <AllowedValue>24</AllowedValue>
                    <AllowedValue>25</AllowedValue>
                    <AllowedValue>29.97</AllowedValue>
                    <AllowedValue>30</AllowedValue>
                    <AllowedValue>50</AllowedValue>
                    <AllowedValue>59.94</AllowedValue>
                    <AllowedValue>60</AllowedValue>
                  </AllowedValueList>
                </StateVariable>
                <StateVariable  name="BitRateType"  datatype="string"  sendEvents="no">
                  <AllowedValueList>
                    <AllowedValue>Average</AllowedValue>
                    <AllowedValue>Maximum</AllowedValue>
                  </AllowedValueList>
                </StateVariable>
                <StateVariable  name="VideoSignalBitRate"  datatype="integer"  sendEvents="no" />
              </StateVariable>
            </StateVariable>
            <StateVariable  name="SourcePlugStateList"  datatype="array"  sendEvents="no">
              <StateVariable  name="SourcePlugState"  datatype="struct"  sendEvents="no">
                <StateVariable  name="SourcePlugNumber"  datatype="hexBinary"  sendEvents="no" />
                <StateVariable  name="OperatingMode"  datatype="string"  sendEvents="no">
```

```
                <AllowedValueList>
                  <AllowedValue>Search</AllowedValue>
                  <AllowedValue>Record</AllowedValue>
                  <AllowedValue>Play</AllowedValue>
                  <AllowedValue>Stop</AllowedValue>
                  <AllowedValue>Suspended</AllowedValue>
                </AllowedValueList>
              </StateVariable>
              <StateVariable name="AdditionalInformation" datatype="string" sendEvents="no">
                <AllowedValueList>
                  <AllowedValue>Position</AllowedValue>
                  <AllowedValue>RelativeUnit</AllowedValue>
                  <AllowedValue>Forward</AllowedValue>
                  <AllowedValue>ForwardPause</AllowedValue>
                  <AllowedValue>DiscFull</AllowedValue>
                  <AllowedValue>DiscError</AllowedValue>
                  <AllowedValue>Others</AllowedValue>
                </AllowedValueList>
              </StateVariable>
              <StateVariable name="RootListIDOfAssociatedContentID" datatype="hexBinary"
sendEvents="no" />
              <StateVariable name="AssociatedContentID" datatype="hexBinary" sendEvents="no" />
              <StateVariable name="RelativeIndicator" datatype="string" sendEvents="no" />
            </StateVariable>
          </StateVariable>
          <StateVariable name="RootList" datatype="array" sendEvents="no">
            <StateVariable name="Root" datatype="struct" sendEvents="no">
              <StateVariable name="RootListID" datatype="hexBinary" sendEvents="no" />
              <StateVariable name="ContentLocked" datatype="boolean" sendEvents="no" />
              <StateVariable name="Counter" datatype="integer" sendEvents="no" />
              <StateVariable name="DefaultPlayListID" datatype="hexBinary" sendEvents="no" />
              <StateVariable name="TapePlaybackCapacity" datatype="long" sendEvents="no" />
              <StateVariable name="MaximumRecordingCapacity" datatype="long" sendEvents="no" />
              <StateVariable name="NumberOfContents" datatype="integer" sendEvents="no" />
```

```
            <StateVariable name="Contents" datatype="array" sendEvents="no" />
              <StateVariable name="Content" datatype="struct" sendEvents="no" />
                <StateVariable name="ContentID" datatype="hexBinary" sendEvents="no" />
                  <StateVariable name="ContentLocked" datatype="boolean" sendEvents="no" />
                  <StateVariable name="FrameRateCode" datatype="string" sendEvents="no">
                    <AllowedValueList>
                      <AllowedValue>23.97</AllowedValue>
                      <AllowedValue>24</AllowedValue>
                      <AllowedValue>25</AllowedValue>
                      <AllowedValue>29.97</AllowedValue>
                      <AllowedValue>30</AllowedValue>
                      <AllowedValue>50</AllowedValue>
                      <AllowedValue>59.94</AllowedValue>
                      <AllowedValue>60</AllowedValue>
                    </AllowedValueList>
                  </StateVariable>
                  <StateVariable name="BitRateType" datatype="string" sendEvents="no">
                    <AllowedValueList>
                      <AllowedValue>Average</AllowedValue>
                      <AllowedValue>Maximum</AllowedValue>
                    </AllowedValueList>
                  </StateVariable>
                  <StateVariable name="VideoSignalBitRate" datatype="integer" sendEvents="no" />
                  <StateVariable name="FormatIdentifier" datatype="hexBinary" sendEvents="no" />
                  <StateVariable name="NetworkInformation" datatype="hexBinary" sendEvents="no"
/>
                  <StateVariable name="OriginalNetworkID" datatype="hexBinary" sendEvents="no"
/>
                  <StateVariable name="TransportStreamID" datatype="hexBinary" sendEvents="no"
/>
                  <StateVariable name="ServiceID" datatype="hexBinary" sendEvents="no" />
                  <StateVariable name="CountryCode" datatype="hexBinary" sendEvents="no" />
                  <StateVariable name="StreamFormatName" datatype="string" sendEvents="no" />
                  <StateVariable name="Hours" datatype="integer" sendEvents="no" />
```

```
                    <StateVariable   name="Minutes"    datatype="integer"    sendEvents="no" />
                    <StateVariable   name="Seconds"    datatype="integer"    sendEvents="no" />
                    <StateVariable   name="TimeStamp"    datatype="dateTime"    sendEvents="no" />
                    <StateVariable   name="ProgramStartingDateTime"    datatype="dateTime"
sendEvents="no" />
                    <StateVariable   name="ProgramDuration"    datatype="duration"    sendEvents="no" />
                    <StateVariable   name="ParentalRating"    datatype="boolean"    sendEvents="no" />
                    <StateVariable   name="ProgramModes"    datatype="string"    sendEvents="no" />
                    <StateVariable   name="Replayed"    datatype="boolean"    sendEvents="no" />
                    <StateVariable   name="MaximumNameLength"    datatype="integer"    sendEvents="no"
/>
                    <StateVariable   name="Name"    datatype="string"    sendEvents="no" />
                    <StateVariable   name="MaximumDescriptionLength"    datatype="integer"
sendEvents="no" />
                    <StateVariable   name="Description"    datatype="string"    sendEvents="no" />
                  </StateVariable>
                </StateVariable>
              </StateVariable>
            </StateVariable>
          </StateVariable>
        </StateVariableList>
        <ServiceList>
          <Service    name="QueryStateVariable"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/QueryStateVariable"/>
          <Service    name="GetDestinationPlugState"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetDestinationPlugState"/>
          <Service    name="GetSourcePlugState"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetSourcePlugState"/>
          <Service    name="GetContentsInformation"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetContentsInformation"/>
          <Service    name="UpdateContentInformation"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/UpdateContentInformation"/>
          <Service    name="ResetPlugConfiguration"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/ResetPlugConfiguration"/>
```

```
        <Service   name="SetPlugConfiguration"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetPlugConfiguration"/>
        <Service   name="EraseAll"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/EraseAll"/>
        <Service   name="Erase"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Erase"/>
        <Service   name="Lock"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Lock"/>
        <Service   name="Unlock"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Unlock"/>
        <Service   name="Play"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Play"/>
        <Service   name="Record"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Record"/>
        <Service   name="SearchPosition"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchPosition"/>
        <Service   name="SearchRelativeUnit"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchRelativeUnit"/>
        <Service   name="SetSourcePlugAssocoation"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetSourcePlugAssociation"/>
        <Service   name="SetDestinationPlugAssocoation"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetDestinationPlugAssociation"/>
        <Service   name="Stop"   type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Stop"/>
        <Service   name="GetIcon"
type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetIcon"/>
      </ServiceList>
    </PrimitiveDevice>
  </PrimitiveDeviceList>
</Device>
```

### 9.5.2. Service Metadata

The metadata templates of the services that AV-HDD devices have are shown below.

(1)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/QueryStateVariable"
```

```
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs "
relatedStateVariable="SerialBusIsochronusOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs " relatedStateVariable="ExternalOutputPlugs"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="PowerState" relatedStateVariable="PowerState"/>
        <Parameter name="SerialBusIsochronousInputPlugs"
relatedStateVariable="SerialBusIsochronousInputPlugs"/>
        <Parameter name="SerialBusIsochronousOutputPlugs "
relatedStateVariable="SerialBusIsochronusOutputPlugs"/>
        <Parameter name="ExternalInputPlugs" relatedStateVariable="ExternalInputPlugs"/>
        <Parameter name="ExternalOutputPlugs " relatedStateVariable="ExternalOutputPlugs"/>
    </OutputParameterList>
</Service>
```

(2)Power Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/Power" name="Power">
    <InputParameterList>
        <Parameter name="powerState" relatedStateVariable="PowerState"/>
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(3)SetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetInputConnection"
name="SetInputConnection">
```

```
    <InputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(4)SetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/SetOutputConnection"
name="SetOutputConnection">
    <InputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </InputParameterList>
    <OutputParameterList/>
</Service>
```

(5)GetInputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetInputConnection"
name="GetInputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousInputPlug</AllowedValue>
                <AllowedValue>SerialBusAsynchronousInputPlug</AllowedValue>
                <AllowedValue>GeneralBusInputPlug</AllowedValue>
                <AllowedValue>ExternalInputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList>
</Service>
```

(6)GetOutputConnection Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetOutputConnection"
name="GetOutputConnection">
    <InputParameterList>
        <Parameter name="primitiveDeviceID" datatype="integer" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="type" datatype="string">
            <AllowedValueList>
                <AllowedValue>PrimitiveDevice</AllowedValue>
                <AllowedValue>SerialBusIsochronousOutputPlug</AllowedValue>
```

```
                <AllowedValue>SerialBusAsynchronousOutputPlug</AllowedValue>
                <AllowedValue>GeneralBusOutputPlug</AllowedValue>
                <AllowedValue>ExternalOutputPlug</AllowedValue>
            </AllowedValueList>
        </Parameter>
        <Parameter name="number" datatype="integer" />
    </OutputParameterList/>
</Service>
```

(7)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/AV-HDD/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

The metadata templates of the services of disk primitive devices have are shown below.

(8)QueryStateVariable Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/QueryStateVariable"
name="QueryStateVariable">
    <InputParameterList>
        <Parameter name="MaximumNumberOfRecordableContents"
relatedStateVariable="MaximumNumberOfRecordableContents"/>
        <Parameter name="ErrorCondition" relatedStateVariable="ErrorCondition"/>
        <Parameter name="DestinationPlugStateList" relatedStateVariable="DestinationPlugStateList"/>
        <Parameter name="SourcePlugStateList" relatedStateVariable="SourcePlugStateList"/>
```

```
        <Parameter name="NumberOfRootList" relatedStateVariable="NumberOfRootList"/>
        <Parameter name="RootList" relatedStateVariable="RootList"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="MaximumNumberOfRecordableContents"
relatedStateVariable="MaximumNumberOfRecordableContents"/>
        <Parameter name="ErrorCondition" relatedStateVariable="ErrorCondition"/>
        <Parameter name="DestinationPlugStateList" relatedStateVariable="DestinationPlugStateList"/>
        <Parameter name="SourcePlugStateList" relatedStateVariable="SourcePlugStateList"/>
        <Parameter name="NumberOfRootList" relatedStateVariable="NumberOfRootList"/>
        <Parameter name="RootList" relatedStateVariable="RootList"/>
    </OutputParameterList>
</Service>
```

(9)GetDestinationPlugState Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetDestinationPlugState"
name="GetDestinationPlugState">
    <InputParameterList>
        <Parameter name="destinationPlugNumber" relatedStateVariable="DestinationPlugNumber"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="destinationPlugState" relatedStateVariable="DestinationPlugState"/>
    </OutputParameterList>
</Service>
```

(10)GetSourcePlugState Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetSourcePlugState"
name="GetSourcePlugState">
    <InputParameterList>
        <Parameter name="sourcePlugNumber" relatedStateVariable="SourcePlugNumber"/>
    </InputParameterList>
```

```
    <OutputParameterList>
        <Parameter name="sourcePlugState" relatedStateVariable="SourcePlugState"/>
    </OutputParameterList>
</Service>
```

(11)GetContentsInformation Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetContentsInformation"
name="GetContentsInformation">
    <InputParameterList>
        <Parameter name="rootListID" relatedStateVariable="RootListID"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="root" relatedStateVariable="Root"/>
    </OutputParameterList>
</Service>
```

(12)UpdateContentInformation Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/UpdateContentInformation"
name="UpdateContentInformation">
    <InputParameterList>
        <Parameter name="rootListID" relatedStateVariable="RootListID"/>
        <Parameter name="contentID" relatedStateVariable="ContentID"/>
        <Parameter name="formatIdentifier" relatedStateVariable="FormatIdentifier"/>
        <Parameter name="networkInformation" relatedStateVariable="NetworkInformation"/>
        <Parameter name="originalNetworkID" relatedStateVariable="OriginalNetworkID"/>
        <Parameter name="transportStreamID" relatedStateVariable="TransportStreamID"/>
        <Parameter name="serviceID" relatedStateVariable="ServiceID"/>
        <Parameter name="countryCode" relatedStateVariable="CountryCode"/>
        <Parameter name="streamFormatName" relatedStateVariable="StreamFormatName"/>
        <Parameter name="formatIdentifier" relatedStateVariable="FormatIdentifier"/>
        <Parameter name="hours" relatedStateVariable="Hours"/>
```

```
        <Parameter name="minutes" relatedStateVariable="Minutes"/>
        <Parameter name="seconds" relatedStateVariable="Seconds"/>
        <Parameter name="timeStamp" relatedStateVariable="TimeStamp"/>
        <Parameter name="programStaringDateTime" relatedStateVariable="ProgramStartingDateTime"/>
        <Parameter name="programDuration" relatedStateVariable="ProgramDuration"/>
        <Parameter name="parentalRating" relatedStateVariable="ParentalRating"/>
        <Parameter name="programModes" relatedStateVariable="ProgramModes"/>
        <Parameter name="replayed" relatedStateVariable="Replayed"/>
        <Parameter name="maximumNameLength" relatedStateVariable="MaximumNameLength"/>
        <Parameter name="name" relatedStateVariable="Name"/>
        <Parameter name="maximumDescriptionLength" relatedStateVariable="MaximumDescriptionLength"/>
        <Parameter name="description" relatedStateVariable="Description"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="result" datatype="string">
            <AllowedValueList>
                <AllowedValue>Success</AllowedValue>
                <AllowedValue>Failure</AllowedValue>
            </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(13)ResetPlugConfiguration Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/ResetPlugConfiguration"
name="ResetPlugConfiguration">
    <InputParameterList>
        <Parameter name="plugType" relatedStateVariable="PlugType">
            <AllowedValueList>
                <AllowedValue>Source</AllowedValue>
                <AllowedValue>Destination</AllowedValue>
            </AllowedValueList>
```

```
        </Parameter>
        <Parameter name="plugNumber" relatedStateVariable="PlugNumber"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>BandwidthExceeded</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>Playing</AllowedValue>
          <AllowedValue>Search</AllowedValue>
          <AllowedValue>Recording</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
          <AllowedValue>PowerOff</AllowedValue>
          <AllowedValue>SubunitBusy</AllowedValue>
          <AllowedValue>Transition</AllowedValue>
          <AllowedValue>Unknown</AllowedValue>
        </AllowedValueList>
      </Parameter>
    </OutputParameterList>
</Service>
```

(14)SetPlugConfiguration Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetPlugConfiguration"
name="SetPlugConfiguration">.
    <InputParameterList>
```

```
        <Parameter name="destinationPlugNumber" datatype="hexBinary"/>
        <Parameter name="frameRateCode" relatedStateVariable="FrameRateCode"/>
        <Parameter name="bitRateType" relatedStateVariable="BitRateType"/>
        <Parameter name="videoSignalBitrate" relatedStateVariable="VideoSignalBitrate"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>BandwidthExceeded</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>Playing</AllowedValue>
          <AllowedValue>Search</AllowedValue>
          <AllowedValue>Recording</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
          <AllowedValue>PowerOff</AllowedValue>
          <AllowedValue>SubunitBusy</AllowedValue>
          <AllowedValue>Transition</AllowedValue>
          <AllowedValue>Unknown</AllowedValue>
        </AllowedValueList>
      </Parameter>
    </OutputParameterList>
</Service>
```

(15)EraseAll Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/EraseAll" name="EraseAll">
```

```
    <InputParameterList/>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>Playing</AllowedValue>
          <AllowedValue>Search</AllowedValue>
          <AllowedValue>Recording</AllowedValue>
          <AllowedValue>NoAVObject</AllowedValue>
          <AllowedValue>InvalidPosition</AllowedValue>
          <AllowedValue>InvalidListOrEntry</AllowedValue>
          <AllowedValue>ContentsLocked</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
          <AllowedValue>PowerOff</AllowedValue>
          <AllowedValue>SubunitBusy</AllowedValue>
          <AllowedValue>Transition</AllowedValue>
          <AllowedValue>Unknown</AllowedValue>
        </AllowedValueList>
      </Parameter>
    </OutputParameterList>
</Service>
```

(16)Erase Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Erase" name="Erase">.
    <InputParameterList>
```

```
        <Parameter name="contentID" relatedStateVariable="ContentID"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>Playing</AllowedValue>
          <AllowedValue>Search</AllowedValue>
          <AllowedValue>Recording</AllowedValue>
          <AllowedValue>NoAVObject</AllowedValue>
          <AllowedValue>InvalidPosition</AllowedValue>
          <AllowedValue>InvalidListOrEntry</AllowedValue>
          <AllowedValue>ContentsLocked</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
          <AllowedValue>PowerOff</AllowedValue>
          <AllowedValue>SubunitBusy</AllowedValue>
          <AllowedValue>Transition</AllowedValue>
          <AllowedValue>Unknown</AllowedValue>
        </AllowedValueList>
      </Parameter>
    </OutputParameterList>
</Service>
```

(17)Lock Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Lock" name="Lock">
```

```
    <InputParameterList>
        <Parameter name="contentID" relatedStateVariable="ContentID"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>InvalidListOrEntry</AllowedValue>
          <AllowedValue>ContentsLocked</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
          <AllowedValue>PowerOff</AllowedValue>
          <AllowedValue>SubunitBusy</AllowedValue>
          <AllowedValue>Transition</AllowedValue>
          <AllowedValue>Unknown</AllowedValue>
        </AllowedValueList>
      </Parameter>
    </OutputParameterList>
</Service>
```

(18)Unlock Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Unlock" name="Unlock">
    <InputParameterList>
        <Parameter name="contentID" relatedStateVariable="ContentID"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>InvalidListOrEntry</AllowedValue>
          <AllowedValue>ContentsLocked</AllowedValue>
          <AllowedValue>InvalidParameter</AllowedValue>
          <AllowedValue>ReservedSubunit</AllowedValue>
```

```
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(19)Play Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Play" name="Play">
    <InputParameterList>
        <Parameter name="playbackMode" datatype="string">
          <AllowedValueList>
            <AllowedValue>Forward</AllowedValue>
            <AllowedValue>ForwardPause</AllowedValue>
          </AllowedValueList>
        </Parameter>
        <Parameter name="sourcePlugNumber" datatype="hexBinary"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>Playing</AllowedValue>
          <AllowedValue>Search</AllowedValue>
```

```
            <AllowedValue>Recording</AllowedValue>
            <AllowedValue>NoAVObject</AllowedValue>
            <AllowedValue>NoPlugAssociation</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>InvalidListOrEntry</AllowedValue>
            <AllowedValue>ContentsLocked</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(20)Record Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Record" name="Record">
    <InputParameterList>
        <Parameter name="recordState" datatype="string">
          <AllowedValueList>
            <AllowedValue>Forward</AllowedValue>
            <AllowedValue>ForwardPause</AllowedValue>
          </AllowedValueList>
        </Parameter>
        <Parameter name="destinationPlugNumber" datatype="hexBinary"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>D-INUnlocked</AllowedValue>
```

```
            <AllowedValue>CantCopy</AllowedValue>
            <AllowedValue>BandwidthExceeded</AllowedValue>
            <AllowedValue>NoMedia</AllowedValue>
            <AllowedValue>DiscError</AllowedValue>
            <AllowedValue>MediaProblem</AllowedValue>
            <AllowedValue>Importing</AllowedValue>
            <AllowedValue>Exporting</AllowedValue>
            <AllowedValue>ReadingTOC</AllowedValue>
            <AllowedValue>WritingTOC</AllowedValue>
            <AllowedValue>Playing</AllowedValue>
            <AllowedValue>Search</AllowedValue>
            <AllowedValue>Recording</AllowedValue>
            <AllowedValue>NoAVObject</AllowedValue>
            <AllowedValue>MaximumNumberOfObjectes</AllowedValue>
            <AllowedValue>InvalidPosition</AllowedValue>
            <AllowedValue>NoPlugAssociation</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>InvalidListOrEntry</AllowedValue>
            <AllowedValue>ContentsLocked</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(21)SearchPosition Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchPosition"
name="SearchPosition">
```

```
    <InputParameterList>
        <Parameter name="sourcePlugNumber" datatype="hexBinary"/>
        <Parameter name="contentPositionNumber" datatype="hexBinary"/>
        <Parameter name="hours" datatype="integer"/>
        <Parameter name="minutes" datatype="integer"/>
        <Parameter name="seconds" datatype="integer"/>
        <Parameter name="frames" datatype="integer"/>
    </InputParameterList>
    <OutputParameterList>
       <Parameter name="result" datatype="string">
         <AllowedValueList>
            <AllowedValue>Success</AllowedValue>
            <AllowedValue>NoMedia</AllowedValue>
            <AllowedValue>DiscError</AllowedValue>
            <AllowedValue>MediaProblem</AllowedValue>
            <AllowedValue>Importing</AllowedValue>
            <AllowedValue>Exporting</AllowedValue>
            <AllowedValue>ReadingTOC</AllowedValue>
            <AllowedValue>WritingTOC</AllowedValue>
            <AllowedValue>NoAVObject</AllowedValue>
            <AllowedValue>InvalidPosition</AllowedValue>
            <AllowedValue>NoPlugAssociation</AllowedValue>
            <AllowedValue>InvalidListOrEntry</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
         </AllowedValueList>
       </Parameter>
    </OutputParameterList>
</Service>
```

(22)SearchRelativeUnit Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SearchRelativeUnit"
name="SearchRelativeUnit">
    <InputParameterList>
        <Parameter name="measurementUnit" datatype="string">
          <AllowedValueList>
            <AllowedValue>Hour</AllowedValue>
            <AllowedValue>Minute</AllowedValue>
            <AllowedValue>Second</AllowedValue>
          </AllowedValueList>
        </Parameter>
        <Parameter name="direction" datatype="string">
          <AllowedValueList>
            <AllowedValue>Forward</AllowedValue>
            <AllowedValue>Backward</AllowedValue>
          </AllowedValueList>
        </Parameter>
        <Parameter name="count" datatype="integer"/>
    </InputParameterList>
    <OutputParameterList>
      <Parameter name="result" datatype="string">
        <AllowedValueList>
          <AllowedValue>Success</AllowedValue>
          <AllowedValue>NoMedia</AllowedValue>
          <AllowedValue>DiscError</AllowedValue>
          <AllowedValue>MediaProblem</AllowedValue>
          <AllowedValue>Importing</AllowedValue>
          <AllowedValue>Exporting</AllowedValue>
          <AllowedValue>ReadingTOC</AllowedValue>
          <AllowedValue>WritingTOC</AllowedValue>
          <AllowedValue>NoAVObject</AllowedValue>
          <AllowedValue>InvalidPosition</AllowedValue>
          <AllowedValue>NoPlugAssociation</AllowedValue>
```

```
            <AllowedValue>InvalidListOrEntry</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(23)SetSourcePlugAssociation Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetSourcePlugAssociation"
name="SetSourcePlugAssociation">
    <InputParameterList>
        <Parameter name="sourcePlugNumber" datatype="hexBinary" />
        <Parameter name="contentID" datatype="hexBinary" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="result" datatype="string">
            <AllowedValueList>
                <AllowedValue>Success</AllowedValue>
                <AllowedValue>NoMedia</AllowedValue>
                <AllowedValue>DiscError</AllowedValue>
                <AllowedValue>MediaProblem</AllowedValue>
                <AllowedValue>Importing</AllowedValue>
                <AllowedValue>Exporting</AllowedValue>
                <AllowedValue>ReadingTOC</AllowedValue>
                <AllowedValue>WritingTOC</AllowedValue>
                <AllowedValue>Playing</AllowedValue>
                <AllowedValue>Search</AllowedValue>
                <AllowedValue>Recording</AllowedValue>
```

```
            <AllowedValue>InvalidListOrEntry</AllowedValue>
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(24)SetDestinationPlugAssociation Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/SetDestinationPlugAssociation"
name="SetDestinationPlugAssociation">
    <InputParameterList>
        <Parameter name="destinationPlugNumber" datatype="hexBinary" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="result" datatype="string">
            <AllowedValueList>
                <AllowedValue>Success</AllowedValue>
                <AllowedValue>NoMedia</AllowedValue>
                <AllowedValue>DiscError</AllowedValue>
                <AllowedValue>MediaProblem</AllowedValue>
                <AllowedValue>Importing</AllowedValue>
                <AllowedValue>Exporting</AllowedValue>
                <AllowedValue>ReadingTOC</AllowedValue>
                <AllowedValue>WritingTOC</AllowedValue>
                <AllowedValue>Playing</AllowedValue>
                <AllowedValue>Search</AllowedValue>
                <AllowedValue>Recording</AllowedValue>
                <AllowedValue>InvalidListOrEntry</AllowedValue>
```

```
            <AllowedValue>InvalidParameter</AllowedValue>
            <AllowedValue>ReservedSubunit</AllowedValue>
            <AllowedValue>PowerOff</AllowedValue>
            <AllowedValue>SubunitBusy</AllowedValue>
            <AllowedValue>Transition</AllowedValue>
            <AllowedValue>Unknown</AllowedValue>
          </AllowedValueList>
        </Parameter>
    </OutputParameterList>
</Service>
```

(25)Stop Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/Stop" name="Stop">
    <InputParameterList>
        <Parameter name="plugType" datatype="string">
            <AllowedValueList>
                <AllowedValue>Source</AllowedValue>
                <AllowedValue>Destination</AllowedValue>
            </AllowedValueList>>
        </Parameter>
        <Parameter name="plugNumber" datatype="hexBinary" />
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="result" datatype="string">
            <AllowedValueList>
                <AllowedValue>Success</AllowedValue>
                <AllowedValue>InvalidParameter</AllowedValue>
                <AllowedValue>ReservedSubunit</AllowedValue>
                <AllowedValue>PowerOff</AllowedValue>
                <AllowedValue>Unknown</AllowedValue>
            </AllowedValueList>
        </Parameter>
    </OutputParameterList>
```

```
</Service>
```

(26)GetIcon Service metadata

```
<?xml version="1.0" ?>
<Service type="http://www.pucc.jp/2007/09/Device/IEEE1394/Disc/Service/GetIcon" name="GetIcon">
    <InputParameterList>
        <Parameter name="url" datatype="string"/>
    </InputParameterList>
    <OutputParameterList>
        <Parameter name="mimeType" datatype="string"/>
        <Parameter name="base64Data" datatype="base64Binary"/>
    </OutputParameterList>
</Service>
```

## Appendix A. Version History

| Document number | Date | Note |
|---|---|---|
| PUCC Metadata Specification – Home Appliance Part 1 IEEE1394 Devices | 30 Sep, 2007 | Version 1.0 |
| | | |
| | | |
| | | |
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| | | |