

Specification of P2 Device Control Protocol & Command

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1 Scope

This document describes communication protocol over TCP/UDP between P2 equipment and external terminal such as PC and PDA.

2 References

Specification of Content Data Structure on P2 Card

3 Definitions, symbols and abbreviations

Shot : Shot is defined that the duration from start of recording to stop of recording by P2 equipment. Most of cases, one Shot consist of one Clip, however, one Shot consists of multiple clips when file size is exceeded 4GB or it is recorded over multiple P2 cards.

4 Conformance Notation

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keywords "optional" indicates that implementation is not necessarily required.

5 Introduction

P2 products use 4 ports for communicating with external terminal. Following sections are described function and communication protocol on each port

Port / Protocol	Function
49152 / TCP	<ul style="list-style-type: none"> • Inquiry of equipment serial information • Add metadata information • Take out P2 clip information...etc.
49153 / UDP	<ul style="list-style-type: none"> • Delivery of TC and operating status • Delivery of Recording format ...etc.
80 / TCP	<ul style="list-style-type: none"> • Take out contents data on P2 card • HTTP Live Streaming ...etc.
554 / TCP	<ul style="list-style-type: none"> • RTSP (Real Time Streaming Protocol) • 6970:7999 / UDP are used for RTP/RTCP also

6 Communication on 49152/TCP port

The communication that uses 49152/TCP port is used to exchange the following information between P2 equipment and an external terminal (Mobile IT equipment such as PC and cellular phones are assumed).

- Take out operation state of P2 equipment (Section 6.4, 6.10)
- Take out P2 Clip list and search clip (Section 6.5, 6.6)
- Take out list of meta information given to the P2 clip which will be taken in the future (Section 6.7)
- Give meta information to specified footage (Section 6.15)
- Give meta information to the P2 clip which will be taken in the future and the P2 clip which is taking now (Section 6.16)

- Give meta information to the P2 clip which has been taken at specified time (Section 6.17)
- Control the recording status of P2 equipment (Section 6.19 - 6.32)

Port No. 49152 can be changed as far as both P2 equipment and external terminal correspond.

6.1 Communication outline

All content of the communication is described with the XML base. The root element of XML is < P2Control >, XML declaration is omitted. Line feed and the space tab are not necessarily under the description according to a basic description rule of XML. The character-code shall be used UTF-8.

When <P2Control> appears to the TCP packet head, the P2 equipment and the external terminal should detect beginning of the communication. Moreover, it is necessary to detect the communication ending by receiving </P2Control>. However, the sizes of the entire XML sentences shall not exceed 16KB. When 16KB is exceeded, the instruction is disregarded. (When "Section6.70 DeckConfig: 3D LUT File" is supported, 500 KB)

The content of the communication sent from external terminal to the P2 equipment is categorized "Inquiry", "Meta addition", "Remote Control", "Configuration" and "Camera Control", and is expressed by < Query >, < Add >, <DeckCtl>, < DeckConfig>and <CamCtl> respectively. Only one categorized tag can be described in one < P2Control > tag. Refer later paragraph for details.

On the other hand, the content of the communication from the P2 equipment to an external terminal is a result of processing. This is expressed by <Response> tag. However, if the error occurs by the process of processing, <Error> tag is used instead of <Response> tag, and the error type is described as a text element in <Error>. Either single <Response> or <Error> is included in single <P2Control> tag. It is also possible to describe the text element freely by using <Message> tag for a detailed message, this is not required. Basic example is shown as follows.

```
<!--Processing succeed(with returned message) -->
<P2Control>
  <Response>
    Result of processing
  </Response>
  <Message>Message </Message>
</P2Control>
```

```
<!--Processing Succeed(without returned message) -->
<P2Control>
  <Response/>
  <Message>Message </Message>
</P2Control>
```

```
<!--Processing error -->
<P2Control>
  <Error> Error type </Error>
  <Message>Message </Message>
</P2Control>
```

General Error string can contain following sentences.

- "Invalid Parameter."

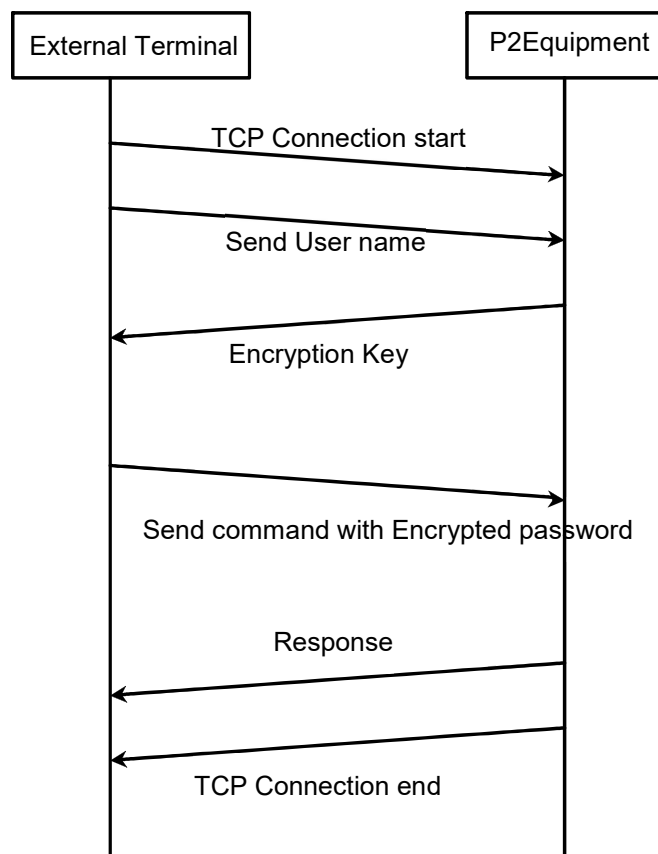
This error indicates that P2 equipment denied accepting the command because it include invalid data

- "Device Busy"

This error indicates that P2 equipment couldn't accept the command because it is special mode (Such as Version Up progressing, etc.).

However, the response of some commands such as CamCtl is exceptional (See each section).

External Terminal shall be passed authorization by sending user name and password to P2 equipment in order to issue command, such as <Query> and <Add>, from external terminal to P2 equipment. Following chart shows communication sequence of single <Query> or <Add> command from external terminal to P2 equipment.



6.2 User Authorization Procedure

External terminal shall notify UserName to P2 equipment by following XML **within 3 seconds** after connection is established with P2 equipment.

```

<P2Control>
  <Login> UserName </Login>
</P2Control>
  
```

If notified UserName does not exist in the user list, P2 equipment sends following response to terminate TCP connection.

```

<P2Control>
  <Error>Wrong User</Error>
</P2Control>
  
```

If UserName is exist, P2 equipment send back key value to encrypt password as response, then go into command-wait state while keeping TCP connection active. Key value for password consists of realm and nonce, and is notified as below.


```

<P2Control>
  <Response>
    <Realm> realm </Realm>
    <Nonce> nonce </Nonce>
  <Response>
</P2Control>

```

External terminal sends command to P2 equipment by using same TCP connection notified encryption key described above. Where, external terminal shall encrypt password by using encryption key sent by P2 equipment, and send it with <Query> or <Add> command. Password encryption is processed by following procedure.

$$\text{encrypted_password} = \text{MD5}(\text{MD5}(\text{UserName}:\text{realm}:\text{Password}):\text{nonce})$$

Namely, create character string to connect "Username"+":"+"realm"+":"+"Password". Then execute MD5, then connect ":" and "nonce", then execute MD5 again.

Where, MD5 is hash function which creates 128bit hash value from given input value. MD5 is standardized by RFC1321. The output value represents ASCII characters at hexadecimal format.

In order to send command to P2 equipment, external terminal shall send above encrypted password by using <Auth> tag. <Auth> tag shall be placed under <P2Control> tag, and shall be placed before categorized tag such as <Query>, <Add>, or so on.

6.3 Query outline

An external terminal can acquire various information by using <Query> tag. <Query> tag may have the element below depends on the kind of the inquiry as follows.

6.4 Query : Inquiry of P2 environment variable

6.4.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Query Type="env"/>
</P2Control>

```

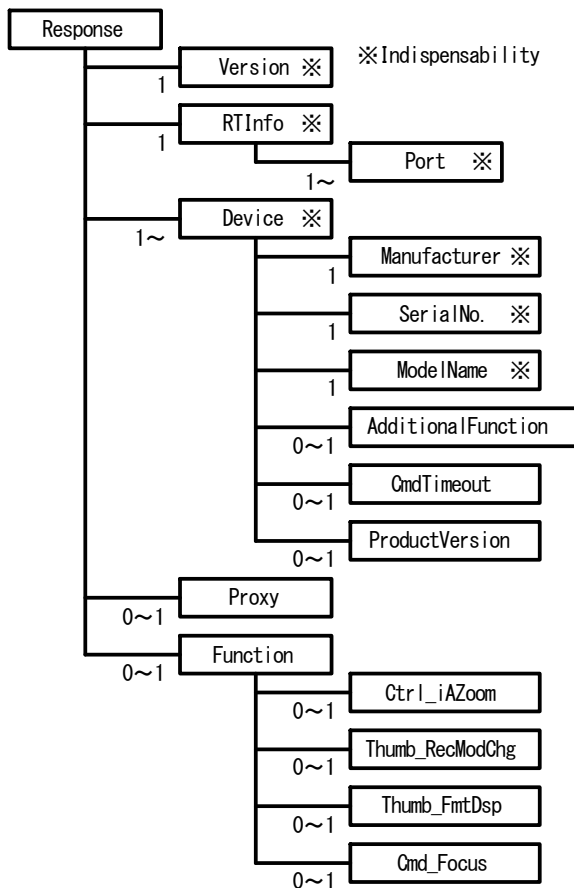
6.4.2 Exposition

To take out the environment variable of the P2 equipment, "env" is set to Type of Query. The following contents are included in the environment variable returned by Response.

- Version of communication specification ... Tag name < Version >
- Port and delivery method of UDP ... Tag name < RTInfo >
- Vender, name of articles, and serial number of P2 equipment ... Tag name < Device >
- Presence of proxy card ... Proxy attribute under <Device> Tag.
- Function type of the equipment ... Tag name <Function>

6.4.3 Response

The composition below < Response > tag is shown in the figure below. Information is described in each end of tag as a text element. There is no restriction in the order of describing each element.



Version (indispensable)

Character string of version which can be used by P2 equipment is described.

"3.0" indicates compliance of this document.

Port (indispensable)

Character string that is shown the UDP Port No. and protocol of Chapter 7 are described.

Device (indispensable)

When the Proxy card is inserted in the P2 equipment and is possible to use, "Proxy" is described in the attribute and "true" is set as a value.

In case of Varicam35/HS, more than one Device tags are included to notify each device status of CAMERA, RECORDER, VF, CODEX, individually, by describing each device name in "Name" attribute of <Device> tag.

Manufacturer (indispensable)

Character string that is shown the vender name of the P2 equipment is described.

SerialNo. (indispensable)

Character string that is shown the serial number of the P2 equipment is described.

ModelName (indispensable)

Character string that is shown the model name of the P2 equipment is described.

AdditionalFunction

Character string that is shown the additional function of the P2 equipment is described.

CmdTimeout

Timeout period for TCP command is described as integer value and unit is msec. If this tag does not exist, default value is used.

ProductVersion (indispensable, only for Varicam Series)

Character string that is shown the Product Version number.

Function

This tag is used when equipment notify its functions and how to behave.

Ctrl_iAZoom

Type of iA Zoom function is described. The defined value is as follows. If this tag does not exist, it consider as "None" is defined.

String	Definition
None	No iA Zoom function.
Standalone	iA Zoom function is independent of Zoom function.
Continuous	iA Zoom function works after optical Zoom function.

Thumb_RecModChg

Type of selecting function for video format in THUMB mode is described. If this tag does not exist, it consider as "None" is defined.

String	Definition
None	No selecting function for video format.
Mov_Mp4_Avchd	Selecting function for video format is available. Selectable video formats are MOV, MP4 and AVCHD.

Thumb_FmtDsp

Display type of video format information for clip in THUMB mode is described. If this tag does not exist, it consider as "None" is defined.

String	Definition																												
None	No display for recording format information.																												
Type1	<div>Following table is displayed in THUMB mode.</div> <table><tr><th colspan="2">VIDEO</th><th colspan="2">AUDIO</th></tr><tr><td>Format</td><td>XXXX</td><td>Codec</td><td>XXXX</td></tr><tr><td>Resolution</td><td>XXXX</td><td>Sampling freq.</td><td>XXKHz</td></tr><tr><td>Framerate</td><td>XXXX</td><td>Sample bit</td><td>XXbit</td></tr><tr><td>Bitrate</td><td>XXXMbps</td><td colspan="2"></td></tr><tr><td colspan="2">Start Time Code</td><td colspan="2">XX:XX:XX:XX</td></tr><tr><td colspan="2">Date</td><td colspan="2">XXXX.XX.XX</td></tr></table> <div>Note: “X”s are suitable values for each item.</div>	VIDEO		AUDIO		Format	XXXX	Codec	XXXX	Resolution	XXXX	Sampling freq.	XXKHz	Framerate	XXXX	Sample bit	XXbit	Bitrate	XXXMbps			Start Time Code		XX:XX:XX:XX		Date		XXXX.XX.XX	
VIDEO		AUDIO																											
Format	XXXX	Codec	XXXX																										
Resolution	XXXX	Sampling freq.	XXKHz																										
Framerate	XXXX	Sample bit	XXbit																										
Bitrate	XXXMbps																												
Start Time Code		XX:XX:XX:XX																											
Date		XXXX.XX.XX																											

Cmd_Focus

Command type of focusing is described. If this tag does not exist, it consider as "FcPos" is defined.

String	Definition
FcPos	To focus a camera, FcPos command is used.
FcSpd	To focus a camera, FcSpd command is used.

6.4.4 Response example

```

<P2Control>
  <Response>
    <Version>3.0</Version>
    <RTInfo>
      <Port>49153/udp</ Port >
    </ RTInfo >
    <Device Proxy="true">
      <Manufacturer>Panasonic</Manufacturer>
      <SerialNo.>HBTKB0113</SerialNo.>
      <ModelName>AJ-ZS0500</ModelName>
      <AdditionalFunction>MovieRemote</AdditionalFunction>
      <CmdTimeout>10000</CmdTimeout>
    </Device>
  
```

```

<Function>
  <Ctrl_iAZoom>Continuous</ Ctrl_iAZoom>
  <Thumb_RecModChg>Mov_Mp4_Avchd</Thumb_RecModChg>
  <Thumb_FmtDsp>Type1</Thumb_FmtDsp>
</Function>
</Response>
</P2Control>

```

6.5 Query : Take out P2 shot list

6.5.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Query Type="shots"/>
  <TargetSlot>1</TargetSlot>
  <TargetFormat>MOV</TargetFormat>
</P2Control>

```

6.5.2 Exposition

The list of the shots that exists in media in the P2 equipment can be acquired by specifying "shots" for Type of Query. The shot described here is a P2 file group composed of at least one P2 clip.

TargetSlot (indispensable, only for AG model)

The slot number of the P2 equipment to get clip information is described by the integer.

This tag should be described when AdditionalFunction value is "MovieRemote". (See "6.4 Query : Inquiry of P2 environment variable".)

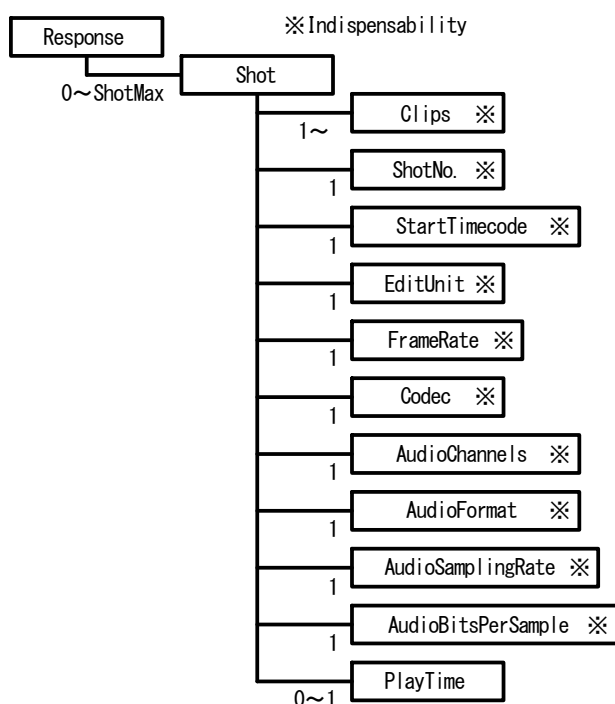
TargetFormat

The video format to display thumbnails of clips is described.

The value is one of "MP4", "MOV" or "AVCHD" when <Thumb_RecModChg> value is "Mov_Mp4_Avchd". (See 6.4 "Query : Inquiry of P2 environment variable").

6.5.3 Response

The composition below < Response > tag is shown in the figure below. There is no restriction in the order of describing each element.



Shot

When the shot mark is given to the shot, the attribute "Shotmark" is described. When the shot mark is not given, it doesn't describe it.

When the proxy image of the shot is recorded, the attribute "Proxy" is described. When the proxy image is not recorded, it doesn't describe it.

When the text memo is given to the meta data of the shot, the attribute "TextMemo" is described. When the text memo is not given, it doesn't describe it.

When data is corrupted however it may possible to repair by repair process in the P2 equipment, the attribute "Defective" is described. When data is unable to repair, the attribute is "Dead".

When the shot is playable on external terminal such as PC and PDA, the attribute "Playable" is described. If the value is "false" ("Playable="false" is described), the shot is not playable. If the value is "true" ("Playable="true" is described) or the attribute "Playable" is not described, the shot is playable.

Clips (When Shot exists, it is indispensable.)

The list of the clip name of each media included in the shot is described as a character string enumerated by "," punctuation. The clip name is a character string described in clip information as "ClipName" in P2 contents.

The attribute "Slot" and the attribute "P2Serial No." are described in < Clips > tag without fail. The slot number of media that the clip exists in the attribute "Slot" is described by the integral value, and the serial number of media that the clip exists in the attribute "P2Serial No." is described by ten digits.

"Clip name" is described in order of composing the shot. It gives priority to order that composes the shot even when there is a clip recorded in media the different between clips recorded in the same media, and the clip recorded in the same media is described in different < Clips > tag.

ShotNo. (When Shot exists, it is indispensable.)

The serial number of the shot displayed with GUI in the P2 equipment is described by the integral value.

StartTimecode (When Shot exists, it is indispensable.)

StartTimeCode of first clip of the shot is described. StartTimecode is SMPTE time code. This is Character string with the format of "hh:mm:ss:ff". It doesn't contain UB and Drop Frame is used the punctuation character ":".

EditUnit (When Shot exists, it is indispensable.)

EditUnit of first clip of the shot is described. EditUnit is a period of time equal to $1/(\text{Edit Rate})$. Edit Rate is the number of Editable Units in an Essence per second.

String	Definition
1001/30000	Video or Audio & Video mixed clip of 59.94i, 29.97p and 59.94p system
1/25	Video or Audio & Video mixed clip of 50i, 25p and 50p system
1001/2400	Video or Audio & Video mixed clip of 23.98p system

FrameRate (When Shot exists, it is indispensable.)

FrameRate of first clip of the shot is described. FrameRate specifies the frame rate while recording the clip. If drop frame is used, attribute "DropFrameFlag" is described and set "true". Possible values are described in 6.10.3.

Codec (When Shot exists, it is indispensable.)

Codec of first clip of the shot is described. Possible values are described in 6.10.3. The Class attribute specifies Class of the AVC Intra compressions as defined in the AVC Intra specification document. This attribute is optional, but shall be specified when the Codec element is set to the values that signify AVC Intra.

AudioChannels (When Shot exists, it is indispensable.)

AudioChannels of first clip of the shot is described. AudioChannels is the number of audio channels that are recorded in the clip.

AudioFormat (When Shot exists, it is indispensable.)

AudioFormat of first clip of the shot is described. Currently, this value is always set to "MXF".

AudioSamplingRate (When Shot exists, it is indispensable.)

AudioSamplingRate of first clip of the shot is described. Possible values are described in 6.10.3.

AudioBitsPerSample (When Shot exists, it is indispensable.)

AudioBitsPerSample of first clip of the shot is described. A set value is "16" or "24".

PlayTime

Duration of the shot is described. This is Character string with the format of "hh:mm:ss".

6.5.4 Response example

```

<P2Control>
  <Response>
    <Shot Incomplete Shotmark Proxy TextMemo>
      <Clips Slot="1" P2SerialNo.="AZN08H0005">0001ab, 0002cd</Clips>
      <Clips Slot="2" P2SerialNo.="AZN08H0006">0003ef, 0004gh</Clips>
      <Clips Slot="1" P2SerialNo.="AZN08H0005">0005ij</Clips>
      <ShotNo.>1</ShotNo.>
      <StartTimecode>04:26:58:13</StartTimecode>
      <EditUnit>1001/30000</EditUnit>
      <FrameRate DropFrameFlag="true">59.94i</FrameRate>
      <Codec Class="100">AVC-I_1080/59.94i</Codec>
      <AudioChannels>4</AudioChannels>
      <AudioFormat>MXF</AudioFormat>
      <AudioSamplingRate>48000</AudioSamplingRate>
      <AudioBitsPerSample>16</AudioBitsPerSample>
      <PlayTime>00:32:45</PlayTime>
    </Shot>
  </Response>
</P2Control>

```

6.6 Query : Inquiry of latest P2 clip information

6.6.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Query Type="latest_clip"/>
</P2Control>

```

6.6.2 Exposition

Information of the latest clip and the basic state of equipment can be taken out by specifying "latest_clip" on Type of Query. When recording is operating, it indicates the clip under recording, and when recording is not operating, it indicates the clip just before recorded.

The following information is included in Response corresponding to this Query.

When recording is operating at Query

Clip name and record slot under recording

UMID of clip under recording

When stopping at Query

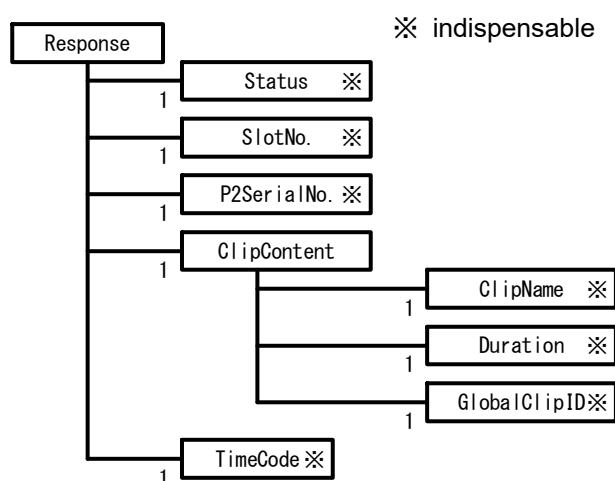
Clip name and slot in which recording completion was done before it stops;

Regardless of the operation at the time of Query;

Status of P2 equipment at the time of Query (recording, stop etc.).

6.6.3 Response

The composition below < Response > tag is shown in the figure below. There is no order restriction of each element.



If there is no recorded clip and not recording state, such as right after power on, error is returned.

Status (indispensable)

Set one of the following descriptions of P2 equipment when P2 equipment receives Query.

“REC”: Recording

“STOP”: Stop (Include playback).

SlotNo. (indispensable)

When the P2 equipment is recording operation when Query is received, the slot number of media that are recording is described.

When the P2 equipment is a halt condition when Query is received, and the recording operation is never done after it starts, the slot number to be recorded by the following recording operation is described. There are recorded clips, the slot number of media that has latest recorded clip is described.

P2SerialNo. (indispensable)

The serial number of media corresponding to above-mentioned SlotNo is described. (ten digits)

ClipName (indispensable)

When the P2 equipment is recording operation when Query is received, the clip name under recording is described.

When the P2 equipment is a stop condition when Query is received, the latest recorded clip name is described.

GlobalClipID (indispensable)

When the P2 equipment is recording operation when Query is received, global clip ID of the clip under recording is described.

When the P2 equipment is a halt condition when Query is received, global clip ID of the latest recorded is described.

6.6.4 Response example

```
<P2Control>
  <Response>
    <Status>REC</Status>
    <SlotNo.>1</SlotNo.>
    <P2SerialNo.> AZN08H0005</P2SerialNo.>
    <ClipContent>
      <ClipName>0001AB</ClipName>
      <GlobalClipID>060A2B340101010501010D43130000006CDE
        112D264805F10080458230D8700D</GlobalClipID>
    </ClipContent>
  </Response>
</P2Control>
```

6.7 Query : Inquiry of preset meta information

6.7.1 SendData

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <!-- When you acquire meta information given to the P2 file taking a picture now -->
  <Query Type="properties">
    <Target>CURRENT</Target>
    <ClipMetadataType>Type of Meta data</ClipMetadataType>
  </Query>
</P2Control>
```

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <!-- When you take out meta information given to the following all P2 file -->
  <Query Type="properties">
    <Target>ALL</Target>
    <ClipMetadataType>Type of Meta data</ClipMetadataType>
  </Query>
</P2Control>
```

6.7.2 Exposition

Meta information given to P2 Clip which is taking now or which will take next can be taken out by setting Type of Query to "properties".

It is the following in meta information that can be take out.

- Meta name
- User clip name
- Creator, and last update person
- Shooter and taking a picture place
- Program name, scene number, and take number
- Reporter and taking a picture purpose and taking a picture object
- Text memo
- Shot mark

< Query > tag in this inquiry has < Target > tag that specifies the object of the inquiry in the subordinate position without fail. Moreover, it has < ClipMetadataType > tag that specifies the kind of the meta data to be acquired.

Target (indispensable)

Character string is indicated that target clip is current recording clip or next recording clip. "CURRENT" indicates current recording clip, and "ALL" indicates next or later recording clips.

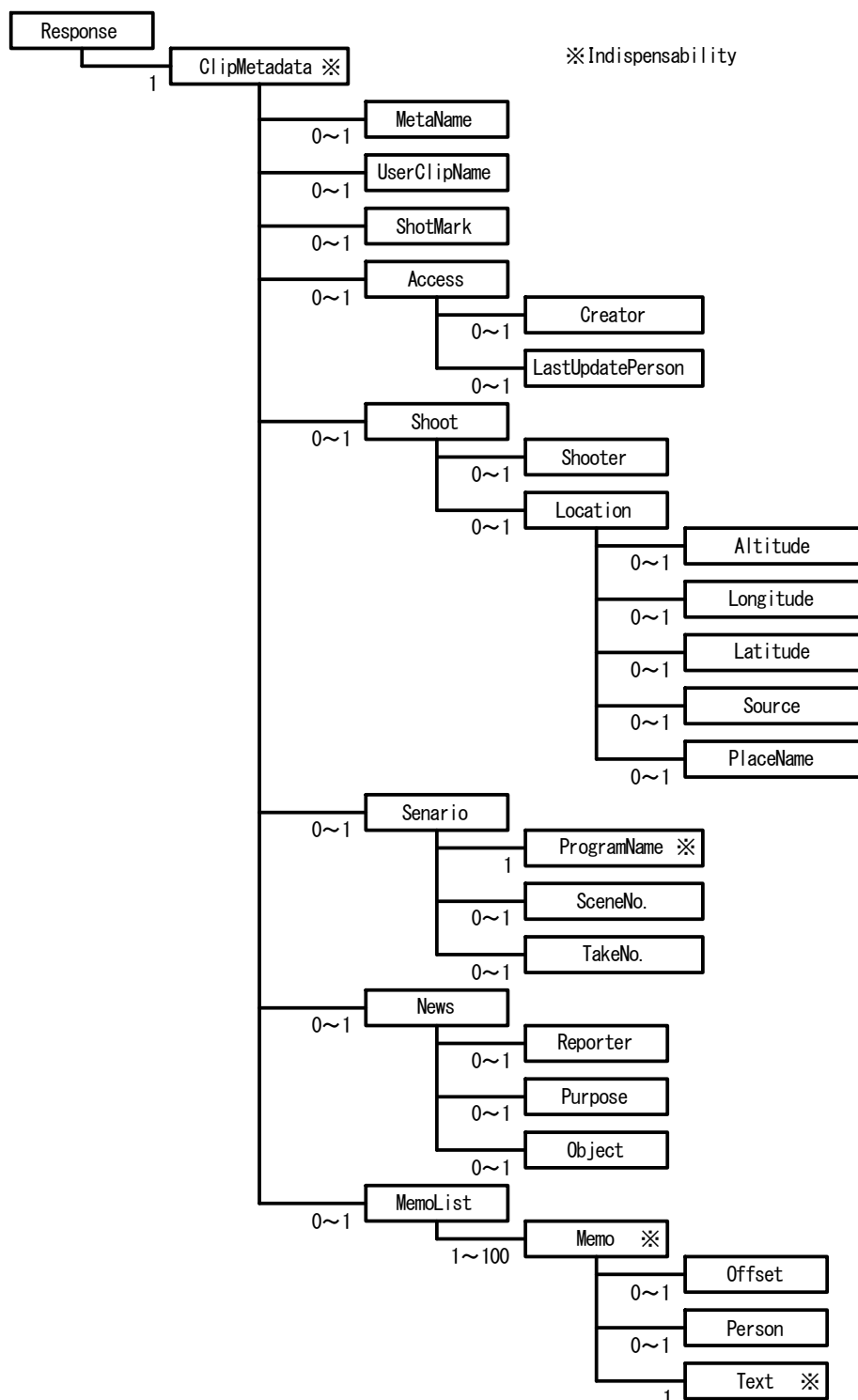
ClipMetadataType (indispensable)

The kind of the meta data to be taken out is described. A set value is as follows. It is data to want to take in parentheses.

- METANAME (meta name)
- USERCLIPNAME (user clip name)
- ACCESS(Creator, last update person)
- SHOOT(shooter, taking a picture place)
- SCENARIO (program name, scene number, and take number)
- NEWS (reporter, taking a picture purpose, and taking a picture object)
- MEMOLIST (text memo)
- SHOTMARK (shot mark)
- ALL(all)

6.7.3 Response

The composition below < Response > tag is shown in the figure below. There is no restriction in the order of describing each element.



ClipMetadata tag has “protection” attribute. Protection=“false” indicates the meta data may modify under P2 equipment setting, and protection=“true” indicates it may not modify.

Following is definition of metadata tag under the ClipMetadata tag.

MetaName	The Name of whole meta group name. This Name is written not to Media but to P2 Equipment only. The maximum length shall be 100 characters.
UserClipName	The UserClipName element specifies the user-defined name of this Clip. The maximum length shall be 100 characters.
ShotMark	The ShotMark element specifies the ShotMark 's presence or absence of this Clip. The element value shall be "true" or "false".
Shooter	The Shooter element specifies the name of the person who shot this Clip. The maximum length shall be 30 characters.
Altitude	The Altitude element specifies the altitude of the location of the shoot. The Altitude element is expressed as a 1-to-6-digit signed value relative to the sea level of the local geoid.
Longitude	The Longitude element specifies the longitude of the location of the shoot. The Longitude element is expressed as normalized string. For example, "135 degrees east longitude" is expressed as "E135.00000"
Latitude	The Latitude element specifies the latitude of the location of the shoot. The Latitude element is expressed as normalized string. For example, "35 degrees north longitude" is expressed as "N35.00000"
Source	The Source element specifies the source of the shooting location information.
PlaceName	The PlaceName element specifies the user-defined name of location of the shoot. The maximum length shall be 100 characters.
ProgramName	(When the Scenario tag exists, it is indispensable.) The ProgramName element specifies the program name. The maximum length shall be 100 characters.
SceneNo.	The SceneNo. element specifies the scene number. This element is specified as integer. The element value shall never be zero.
TakeNo.	The TakeNo. element specifies the take number. This element is specified as integer. The element value shall never be zero.
Reporter	The Reporter element specifies the reporter's name. The maximum length shall be 30 characters
Purpose	The Purpose element specifies the purpose of this news. The maximum length shall be 100 characters.
Object	The Object element specifies the object of this news. The maximum length shall be 100 characters.
Offset	The Offset element specifies the offset of the frame which this memo is related. The element is specified as integer.
Text	(When the Memo tag exists, it is indispensable.) The Text element specifies the textual memo. The length shall be less than 1000 characters.

6.7.4 Response example

This example is set UserClipName to "Movie01", Scene Number to "1" and take number to "5".

```
<P2Control>
<Response>
  <ClipMetadata protection="false">
    <UserClipName>Movie 01</UserClipName>
    <Senario>
      <ProgramName/>
      <SceneNo.>1</SceneNo.>
      <TakeNo.>5</TakeNo.>
    </Senario>
  </ClipMetadata>
</Response>
</P2Control>
```

6.8 Query : Inquiry of time information in P2 equipment

6.8.1 Send data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <Query Type="localtime"/>
</P2Control>
```

6.8.2 Exposition

Time in the P2 equipment of point that receives Query can be acquired by specifying "Time" Type of Query. This is useful to correct the gap of the clock between the external terminal and the P2 equipment simply.

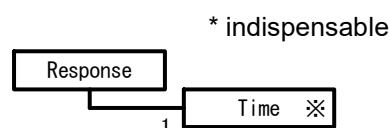
The difference of the clock of the external terminal and the P2 equipment is detected by following procedures.

1. External terminal memorize own time (T1)
2. Query time to P2 equipment
3. When receive response, external terminal memorise own time (T2)
4. If T0 is defined time on response, $T0 - (T1+T2)/2$ is predicted time difference between P2 equipment and external terminal

It cannot expect same accuracy as NTP because it uses TCP as a protocol. It is the simple one. It is preferable to take the measures such as taking the average repeatedly of the above-mentioned procedure several times.

6.8.3 Response

The composition below < Response > tag is shown in the figure below.



Time

Time in the P2 equipment in point that receives Query is described. The one that the Unix time was expressed in each millisecond is used for the description of time. The millisecond that passes from "1970/1/1/00:00:00 UTC" is described by the integral value.

6.8.4 Example

Response example (In case of , time is 26 Mar 2009 10:40:12 GMT)

```
<P2Control>
  <Response>
    <Time> 1238064012972</Time>
  </Response>
</P2Control>
```

6.9 Query : Conversion from Time to clip name

6.9.1 Send Data

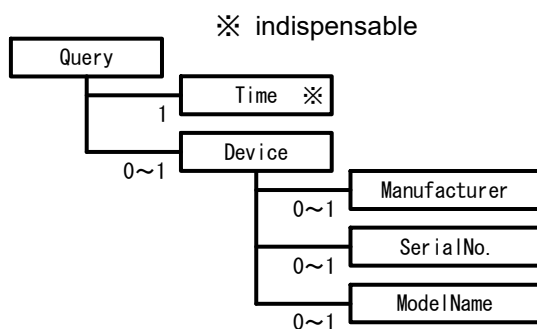
```
<P2Control>
  <Query Type="time_clip">
    <Time>Time of Day</Time>
    <Device>
      Device information
    </Device>
  </Query>
</P2Control>
```

6.9.2 Exposition

By setting "time_clip" to Query Type, corresponding clip name, address, and offset in the clip can be acquired.

When two or more corresponding clips are found, only the information related the newest date clip is returned.

< Query > tag shall have the tag to specify Time as follows. In addition, the device that records the clip can be specified by using < Device > tag, however, it is not indispensable.



Time (indispensable)

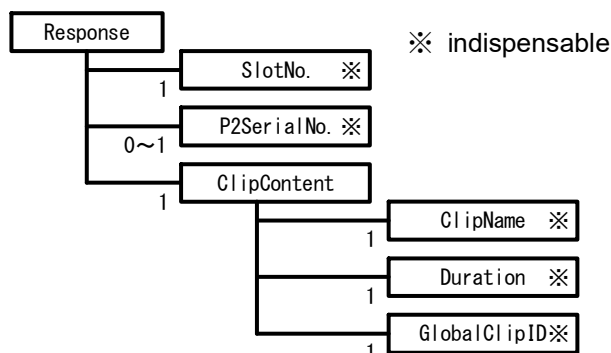
Time for clip search is described. Unix time expressed in millisecond is used. Namely, the milliseconds passed from 1970/1/1/00:00:00 UTC is described by the integral value.

Device

P2 equipment recorded the clip can be specified for clip search. < Manufacturer>, <Serial No. >, and <ModelName > tags under <Device>tag are the same definition as explained by "6.4 Query". No need to specify all tags. If these are specified, only the completely corresponding clip is returned.

6.9.3 Response

The composition of < Response > tag is shown below. There is no order restriction in each element.



SlotNo. (indispensable)

The P2 card slot number in which media are inserted is described by the integral value.

P2SerialNo.

The ten digits serial number of media where the clip exists is described.

ClipName (indispensable)

The clip name is described. "Clip name" is described in clip information as "ClipName" in P2 contents.

Duration (indispensable)

The offset value is described as number of frames.

GlobalClipID (indispensable)

Global clip ID is described. Global clip ID is a value to specify the clip uniquely.

6.9.4 Response example

```

<P2Control>
  <Response>
    <SlotNo.>1</SlotNo.>
    <P2SerialNo.> AZN08H0005</P2SerialNo.>
    <ClipContent>
      <ClipName>0001AB</ClipName>
      <Duration>359</Duration>
      <GlobalClipID>060A2B340101010501010D4313000000
        6CDE112D264805F10080458230D8700D</GlobalClipID>
    </ClipContent>
  </Response>
  
```



```
</P2Control>
```

6.10 Query : Equipment Status

6.10.1 Sending example

```
<P2Control>  
  <Auth>encrypted_password</Auth>  
  <Query Type="status"/>  
</P2Control>
```

*In case of including Network/GPS information on Varicam series.

```
<P2Control>  
  <Auth>encrypted_password</Auth>  
  <Query Type="status" Option="peripheral" />  
</P2Control>
```

6.10.2 Exposition

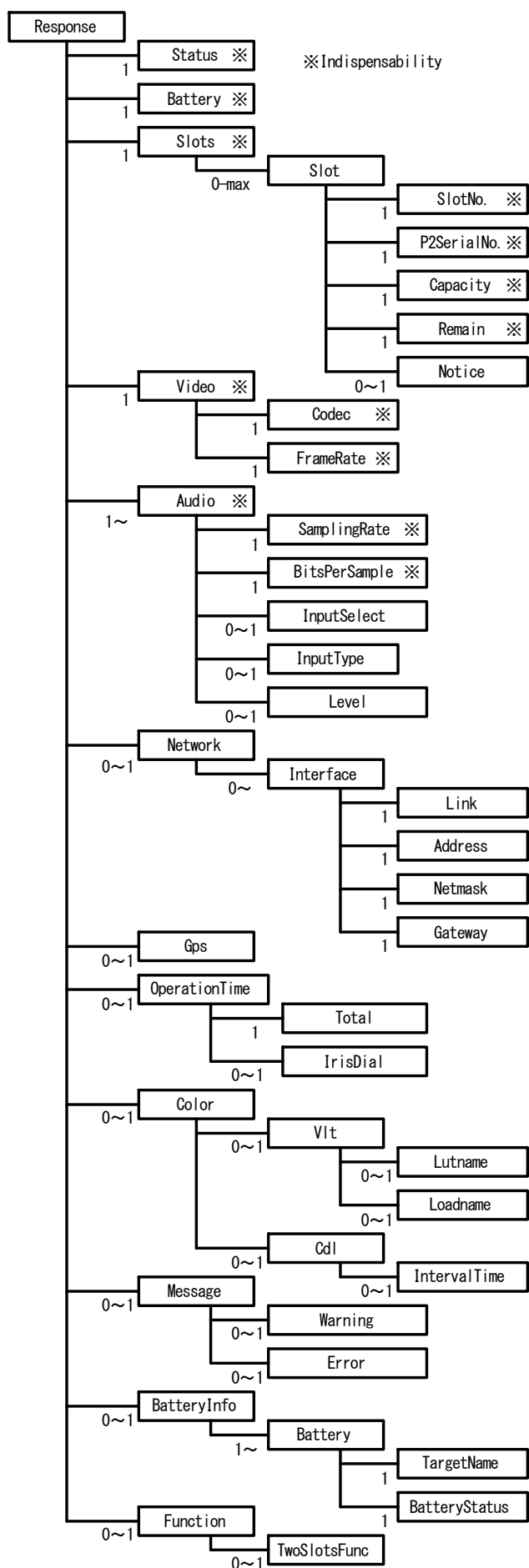
By specifying "status" in Query Type, it acquires P2 equipment status. There are following elements;

- Operating status (Recording / Stop)
- Recording mode (Codec, Format)
- Battery remaining
- Slot number of accessible media and its status (capacity, remaining, serial No. etc.)

It should not use this query as polling when it can get P2 equipment status by UDP communication, because TCP has more time difference than UDP.

6.10.3 Response

Structure under <Response> tag is followings. There is no order restriction in each element.



Status (indispensable)

Either of two strings is returned at the time of Query command receipt

External terminal should recognize "STOP" state if unknown strings are received.

- "REC" : Recording state
- "STOP" : Stop state (including playback state)

Battery (indispensable)

It is described battery remaining amount as integer percentage at the time of Query command receipt.

Slots (indispensable)

<Slots> tag has always "Max" attribute which indicates number of available slots in P2 equipment.

Under the <Slots> tag, there are available media in <Slot> tag. Each <Slot> tag corresponds to valid media. If there is no media in the P2 equipment, only <Slots> tag is exist and no <Slot> tag.

Slot

If certain slot is recording target (orange LED is ON or Blinking on typical P2 Equipment), attribute is described "Active" and set "true".

If certain slot is ReadOnly state, (for example, Media is protected by ReadOnly switch), attribute is described "ReadOnly" and set "true"

SlotNo. (indispensable if Slot exists)

Slot Number is described, which is inserted valid media. Slot number is written in P2 equipment.

P2SerialNo. (indispensable if Slot exists)

10 digit P2 serial number is described, which is media ID.

Capacity (indispensable if Slot exists)

Media capacity is described as integer value, and unit is seconds.

Remain (indispensable if Slot exists)

Remaining amount is described as integer value, and unit is seconds.

Notice (indispensable, only for Varicam Series)

Status Information of target slot. Highest priority state is chosen if multi states of below correspond.

String	Definition
*** %	Rest Capacity(percentage)
UNLK	Unlock(Varicam35/HS only)
OPEN	Card door is opened(VaricamLT only)

AUTH NG	Authenticantion Error
REC IMPOSSIBLE	Rec is impossible(such as spanned rec. fail)
RUN DOWN	Run Down Card
DIR NG	Directory structure is not correct
NOT SUPPORTED	Unsupported card
FORMAT ERROR	Format error card
NO REMAIN	No rest capacity(includes over 1000 clips)

Codec (indispensable)

Video Codec specified as recording mode in P2 equipment is described at the time of Query receipt.

String is one of followings.

String	Definition
DV25_411	DV and DV-based format, 25Mbps, YCbCr at 4:1:1
DV25_420	DV format, 25Mbps, YCbCr at 4:2:0
DV50_422	DV-based format, 50Mbps, YCbCr at 4:2:2
DV100_1080/59.94i	DV-based format, 100Mbps, 1080/59.94i
DV100_1080/50i	DV-based format, 100Mbps, 1080/50i
DV100_720/59.94p	DV-based format, 100Mbps, 720/59.94p
DV100_720/50p	DV-based format, 100Mbps, 720/50p
AVC-I_1080/59.94i	AVC Intra compression, 1080/59.94i
AVC-I_1080/50i	AVC Intra compression, 1080/50i
AVC-I_1080/29.97p	AVC Intra compression, 1080/29.97p
AVC-I_1080/25p	AVC Intra compression, 1080/25p
AVC-I_720/59.94p	AVC Intra compression, 720/59.94p
AVC-I_720/50p	AVC Intra compression, 720/50p
MP4_4K_2160/24.00p_100M	MP4 4K/24.00p Recording Format, 100Mbps
MP4_UHD_2160/59.94p_150M	MP4 UHD/59.94p Recording Format, 150Mbps
MP4_UHD_2160/50.00p_150M	MP4 UHD/50.00p Recording Format, 150Mbps
MP4_UHD_2160/29.97p_100M	MP4 UHD/29.97p Recording Format, 100Mbps
MP4_UHD_2160/25.00p_100M	MP4 UHD/25.00p Recording Format, 100Mbps
MP4_UHD_2160/23.98p_100M	MP4 UHD/23.98p Recording Format, 100Mbps
MP4_FHD_1080/59.94p_200M	MP4 FHD/59.94p Recording Format, 200Mbps
MP4_FHD_1080/50.00p_200M	MP4 FHD/50.00p Recording Format, 200Mbps

MP4_FHD_1080/59.94p_100M	MP4 FHD/59.94p Recording Format, 100Mbps
MP4_FHD_1080/50.00p_100M	MP4 FHD/50.00p Recording Format, 100Mbps
MP4_FHD_1080/59.94p_50M	MP4 FHD/59.94p Recording Format, 50Mbps
MP4_FHD_1080/50.00p_50M	MP4 FHD/50.00p Recording Format, 50Mbps
MP4_FHD_1080/29.97p_200M	MP4 FHD/29.97p Recording Format, 200Mbps
MP4_FHD_1080/25.00p_200M	MP4 FHD/25.00p Recording Format, 200Mbps
MP4_FHD_1080/23.98p_200M	MP4 FHD/23.98p Recording Format, 200Mbps
MP4_FHD_1080/29.97p_50M	MP4 FHD/29.97p Recording Format, 50Mbps
MP4_FHD_1080/25.00p_50M	MP4 FHD/25.00p Recording Format, 50Mbps
MP4_FHD_1080/23.98p_50M	MP4 FHD/23.98p Recording Format, 50Mbps
MP4_FHD_1080/59.94i_50M	MP4 FHD/59.94i Recording Format, 50Mbps
MP4_FHD_1080/50.00i_50M	MP4 FHD/50.00i Recording Format, 50Mbps
MOV_4K_2160/24.00p_100M	MOV 4K/24.00p Recording Format, 100Mbps
MOV_UHD_2160/59.94p_150M	MOV UHD/59.94p Recording Format, 150Mbps
MOV_UHD_2160/50.00p_150M	MOV UHD/50.00p Recording Format, 150Mbps
MOV_UHD_2160/29.97p_100M	MOV UHD/29.97p Recording Format, 100Mbps
MOV_UHD_2160/25.00p_100M	MOV UHD/25.00p Recording Format, 100Mbps
MOV_UHD_2160/23.98p_100M	MOV UHD/23.98p Recording Format, 100Mbps
MOV_FHD_1080/59.94p_200M	MOV FHD/59.94p Recording Format, 200Mbps
MOV_FHD_1080/50.00p_200M	MOV FHD/50.00p Recording Format, 200Mbps
MOV_FHD_1080/59.94p_100M	MOV FHD/59.94p Recording Format, 100Mbps
MOV_FHD_1080/50.00p_100M	MOV FHD/50.00p Recording Format, 100Mbps
MOV_FHD_1080/59.94p_50M	MOV FHD/59.94p Recording Format, 50Mbps
MOV_FHD_1080/50.00p_50M	MOV FHD/50.00p Recording Format, 50Mbps
MOV_FHD_1080/29.97p_200M	MOV FHD/29.97p Recording Format, 200Mbps
MOV_FHD_1080/25.00p_200M	MOV FHD/25.00p Recording Format, 200Mbps
MOV_FHD_1080/23.98p_200M	MOV FHD/23.98p Recording Format, 200Mbps
MOV_FHD_1080/29.97p_50M	MOV FHD/29.97p Recording Format, 50Mbps
MOV_FHD_1080/25.00p_50M	MOV FHD/25.00p Recording Format, 50Mbps
MOV_FHD_1080/23.98p_50M	MOV FHD/23.98p Recording Format, 50Mbps
MOV_FHD_1080/59.94i_50M	MOV FHD/59.94i Recording Format, 50Mbps
MOV_FHD_1080/50.00i_50M	MOV FHD/50.00i Recording Format, 50Mbps

MOV_FHD_1080/29.97p_8M	MOV FHD/29.97p Recording Format, 8Mbps
MOV_FHD_1080/25.00p_8M	MOV FHD/25.00p Recording Format, 8Mbps
MOV_FHD_1080/23.98p_8M	MOV FHD/23.98p Recording Format, 8Mbps
MOV_FHD_1080/59.94p_8M	MOV FHD/59.94p Recording Format, 8Mbps
MOV_FHD_1080/50.00p_8M	MOV FHD/50.00p Recording Format, 8Mbps
MOV_DU50_1080/59.94p_50M	MOV FHD/59.94p Dual Codec, 50Mbps
MOV_DU50_1080/50.00p_50M	MOV FHD/50.00p Dual Codec, 50Mbps
MOV_DU50_1080/29.97p_50M	MOV FHD/29.97p Dual Codec, 50Mbps
MOV_DU50_1080/25.00p_50M	MOV FHD/25.00p Dual Codec, 50Mbps
MOV_DU50_1080/23.98p_50M	MOV FHD/23.98p Dual Codec, 50Mbps
MOV_DU8_1080/59.94p_8M	MOV FHD/59.94p Dual Codec, 8Mbps
MOV_DU8_1080/50.00p_8M	MOV FHD/50.00p Dual Codec, 8Mbps
MOV_DU8_1080/29.97p_8M	MOV FHD/29.97p Dual Codec, 8Mbps
MOV_DU8_1080/25.00p_8M	MOV FHD/25.00p Dual Codec, 8Mbps
MOV_DU8_1080/23.98p_8M	MOV FHD/23.98p Dual Codec, 8Mbps
AVCHD_PS_1080/59.94p_28M	AVCHD PS/59.94p Recording Format, 28Mbps
AVCHD_PS_1080/50.00p_28M	AVCHD PS/50.00p Recording Format, 28Mbps
AVCHD_PH_1080/59.94i_24M	AVCHD PH/59.94i Recording Format, 24Mbps
AVCHD_PH_1080/50.00i_24M	AVCHD PH/50.00i Recording Format, 24Mbps
AVCHD_PH_1080/23.98p_24M	AVCHD PH/23.98p Recording Format, 24Mbps
AVCHD_HA_1080/59.94i_17M	AVCHD HA/59.94i Recording Format, 17Mbps
AVCHD_HA_1080/50.00i_17M	AVCHD HA/50.00i Recording Format, 17Mbps
AVCHD_HE_1080/59.94i_5M	AVCHD HE/59.94i Recording Format, 5Mbps
AVCHD_HE_1080/50.00i_5M	AVCHD HE/50.00i Recording Format, 5Mbps
AVCHD_PM_1080/59.94p_9M	AVCHD PM/59.94p Recording Format, 9Mbps
AVCHD_PM_1080/50.00p_9M	AVCHD PM/50.00p Recording Format, 9Mbps
AVCHD_SA_480/59.94i_9M	AVCHD SA/59.94i Recording Format, 9Mbps
AVCHD_SA_576/50.00i_9M	AVCHD SA/50.00i Recording Format, 9Mbps

*For Varicam series:

If MAIN CODEC is available, one of below:

{CodecName}_{Pixel}/{FrameRate}

{CodecName}_{Pixel}/{FrameRate}_HS

If MAIN CODEC is not available:

OFF

Each parameter is as follows:

<i>CodecName</i> String	Definition
I-4K444	AVC Intra 4K 444
I-4K422	AVC Intra 4K 422
I-4K-LT	AVC Intra 4K LT
I-2K444	AVC Intra 2K 444
I-2K422	AVC Intra 2K 422
I-2K-LT	AVC Intra 2K LT
AVC-I444	AVC Intra 444
AVC-I422	AVC Intra 422
AVC-I200	AVC Intra200
AVCI-100	AVC Intra100
AVCI-100(HS)	AVC Intra100(HighSpeed)
AVCI-LT	AVC Intra LT
ProRes444	ProRes 444
ProRes422	ProRes 422
ProResLT	ProRes LT
ProResHQ	ProRes HQ
420LongGOP_150M	420 LongGOP 150M
420LongGOP_100M	420 LongGOP 100M
420LongGOP_50M	420 LongGOP 50M
422LongGOP_150M	422 LongGOP 150M
422LongGOP_100M	422 LongGOP 100M
422LongGOP_50M	422 LongGOP 50M
422Intra_400M	422 I ntra 400M
422Intra_200M	422 Intra 200M
422Intra_100M	422 Intra 100M

<i>Pixel</i> String	Definition
4096	4096x2160
3840	3840x2160
2048	2048x1080
1920	1920x1080
1280	1280x720
1920CROP	1920x1080 (Crop Mode)
2048CROP	2048x1080 (Crop Mode)

<i>FrameRate</i> String	Definition
50i	50 fps interlaced.
59.94i	59.94 fps interlaced.
23.98p	23.98 fps progressive
24p	24 fps progressive
25p	25 fps progressive
29.97p	29.97 fps progressive
50p	50 fps progressive
59.94p	59.94 fps progressive

FrameRate (indispensable)

Video frame rate specified as recording mode in P2 equipment is described at the time of Query receipt.

String is one of followings. And if drop frame is used, attribute “DropFrameFlag” is described and set “true”.

String	Definition
50i	50 fps interlaced.
59.94i	59.94 fps interlaced.
23.98p	23.98 fps progressive
25p	25 fps progressive
24p	24 fps progressive
29.97p	29.97 fps progressive
50p	50 fps progressive
59.94p	59.94 fps progressive

SamplingRate (indispensable)

Audio sampling rate specified as recording mode in P2 equipment is described as integer value at the time of Query receipt. Most of the cases are “48000”.

BitsPerSample (indispensable)

Audio quantizing bits specified as recording mode in P2 equipment is described as integer value at the time of Query receipt.

String	Definition
16	16bit
24	24bit

InputSelect (indispensable, only for Varicam Series)

Name of target input channel (“INPUT1”, “INPUT2”, “FRONT”, “REAR”, ...)

String	Definition
INPUT1	Input 1 (VaricamLT Only)
INPUT2	Input 2 (VaricamLT Only)
INPUT3	Input 3 (VaricamLT Only)
INPUT4	Input 4 (VaricamLT Only)
FRONT	Front (Varicam35/HS Only)
REAR	Rear (Varicam35/HS Only)

InputType (indispensable, only for Varicam Series)

Type of target input channel (“LINE”, “MIC”, ...)

String	Definition
LINE	Line Input
MIC +48V:ON	Mic Input / Mic Power ON
MIC +48V:OFF	Mic Input / Mic Power OFF

Level (indispensable, only for Varicam Series)

Level setting of target input channel (“AUTO”, “MANUAL”)

String	Definition
AUTO	Audio Input Level = AUTO
MANUAL	Audio Input Level = MANUAL

Value (indispensable, only for Varicam Series)

Assigned function string of User Switch of USER5 – USER10 (SixUserButton of Varicam)

Network (indispensable, only for Varicam Series)

Network Information

To get this information, it is necessary to send “status” command with optional attribute “peripheral”.

Interface (indispensable, only for Varicam Series)

Information of each Interface

Device type such as “LAN”, “WLAN”, or “LTE” is set at “Type” attribute.

Type Attribute String	Definition
OFF	Network SEL = OFF
LAN	Network SEL = LAN
WLAN	Network SEL = WLAN
LTE	Network SEL = LTE

Link (indispensable, only for Varicam Series)

Character string of Link status of network

String	Definition
LINK	Link
NO LINK	NoLink
ERROR	DeviceError

Address (indispensable, only for Varicam Series)

Character string of IP Address of network

Netmask (indispensable, only for Varicam Series)

Character string of Netmask of network

Gateway (indispensable, only for Varicam Series)

Character string of Gateway address of network

Gps (indispensable, only for Varicam Series)

Character string of GPS status

To get this information, it is necessary to send “status” command with optional attribute “peripheral”.

String	Definition
OFF	GPS is OFF
NOT RECEIVED	Device does not receive GPS
LEVEL (N)/3	Device does not receive GPS --- “N” is integer

OperationTime (indispensable, only for Varicam Series)

Statistical informations such as Running time or amount of manipulation

Total (indispensable, only for Varicam Series)

Total Running time in number of hours.

IrisDial (indispensable, only for Varicam Series)

Total amount of Iris dial manipulation by number of times

*Only for VaricamLT

Color (indispensable, only for Varicam Series)

COLOR setting item

Vlt (indispensable, only for Varicam Series)

COLOR - 3DLUT setting

Lutname (indispensable, only for Varicam Series)

COLOR - 3DLUT setting file name which is current running

Loadname (indispensable, only for Varicam Series)

COLOR - 3DLUT setting file name which is loaded from external

Cdl (indispensable, only for Varicam Series)

COLOR - CDL setting

IntervalTime (indispensable, only for Varicam Series)

COLOR – Interval time of remote CDL setting(msec).

If CDL setting by DeckConfig : SetMenu repeats in shorter time than this value, setting action will delay.

Message (indispensable, only for Varicam Series)

Notification of error/warning message as below

Warning (indispensable, only for Varicam Series)

Warning message string.

Line feed characters are not entered even if the original data has two lines.

Example)

Display

REC IMPOSSIBLE

<SUB 4>

Text of Warning tag

REC IMPOSSIBLE <SUB 4>

* The <> character is escaped in XML.

Error (indispensable, only for Varicam Series)

Error message string.

Line feed characters are not entered even if the original data has two lines.

Example)

Display

AWB NG

<LOW LIGHT>

Text of Warning tag

AWB NG <LOW LIGHT>

* The <> character is escaped in XML.

BatteryInfo (indispensable, only for Varicam Series)

Battery information for component unit.

*This information is included only for Varicam35/HS with Codex recorder connected by extension cable.

TargetName (indispensable, only for Varicam Series)

Character string of battery target name.

String	Definition
POWER CAM	Battery information of camera unit
POWER REC	Battery information of reccorder unit
POWER RAW	Battery information of Codex recorder

BatteryStatus (indispensable, only for Varicam Series)

Character string of each battery status.

String	Definition
NO INFO	No Information (in case of device failure)
EMP	Under Cut
BATT END	END
BATT NEAR END	Near End
BATT LEVEL1/4	1/4
BATT LEVEL2/4	2/4
BATT LEVEL3/4	3/4
BATT LEVEL4/4	4/4
DC POWER SUPPLY	Supplied by DC power
From V-RAW Recorder	Supplied by external unit such as Codex

Detail Status

Equipment detail status is returned.

Busy

Boolean value. If the value is true, P2 equipment cannot accept control command or play.

Menu

Boolean value. If the value is true, menu is displayed and GUI is off.

ServoRefMissing

Boolean value. If the value is true, there is no reference signal.

HardwareError

Boolean value. If the value is true, there is hardware error.

ControlMode

Remote/Local control mode is specified.

String	Definition
Local	Local control mode
Remote	Remote control mode

Play

Playing state is specified.

String	Definition
Stop	Stop state or Recording state
Rewind	Rewind state
FastForward	Fast forward state
Play	Playing state
Shuttle	Shuttle state
Jog	Jog state
Var	Var state
Still	Still state
Pause	Pause state

"direction" attribute specifies the direction of Shuttle/Jog/Var.

- "forward" : play forward
- "backward" : play backward

CueUp

Boolean value. If the value is true, Cue up is ready.

Position

Current position is specified.

String	Definition
Begin	Beginning of play list
Middle	Middle of play list
End	End of play list

SystemAlarm

Boolean value. If the value is true, there is system alarm.

RecInhi

Boolean value. If the value is true, P2 equipment cannot record.

ClipSelect

Boolean value. If the value is true, Clip select mode is ON.

TwoSlotsFunc

Current setting of 2 slots function is specified.

String	Definition
OFF	No 2 slots function
RELAY	Relay recording function
SIMUL	Simul recoding function
BACKGR	BackGround recording function

6.10.4 Response example

```

<P2Control>
  <Response>
    <Status>REC</Status>
    <Battery>90</Battery>
    <Slots Max="5">
      <Slot Active="true">
        <SlotNo.>1</SlotNo.>
        <P2SerialNo.>AZN08H0005</P2SerialNo.>
        <Capacity>64</Capacity>
        <Rremain>46</Rremain>
      </Slot>
      <Slot ReadOnly="true" >
        <SlotNo.>3</SlotNo.>
        <P2SerialNo.>AZN08H0006</P2SerialNo.>
        <Capacity>32</Capacity>
        <Rremain>5</Rremain>
      </Slot>
    </Slots>
    <Video>
      <Codec>DV100_1080</Codec>
      <FrameRate DropFrameFlag="true">59.94i</FrameRate>
    </Video>
    <Audio>
      <SamplingRate>48000</SamplingRate>
      <BitsPerSample>16</BitsPerSample>
    </Audio>
    <DetailStatus>
      <Busy>true</Busy>
      <Menu>false</Menu>
      <ServoRefMissing>false</ServoRefMissing>
      <HardwareError>false</HardwareError>
      <ControlMode>Local</ControlMode>
      <Play direction= "forward">Shuttle</Play>
      <CueUp>true</CueUp>
      <Position>End</Position>
      <SystemAlarm>false<SystemAlarm>

```

```

    <RecInhi>>false</RecInhi>
    <ClipSelect>>false</ClipSelect>
  </DetailStatus>
</Response>
</P2Control>

```

6.11 Query : Take out P2 playlist list

6.11.1 Send Data

```

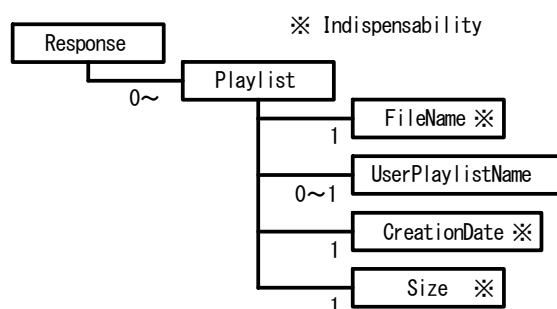
<P2Control>
  <Auth>encrypted_password</Auth>
  <QueryType="playlist"/>
</P2Control>

```

6.11.2 Expositon

The list of the editlist that exists in media in the P2 equipment can be acquired by specifying “playlist”. The specification of editlist is described in “Specification of P2 Edit Metadata version 3.0”, or later.

6.11.3 Response



FileName (indispensable if Slot is exist)

FileName describes the name of editunit file which is saved in media in P2 equipment.

UserPlaylistName

UserPlaylistName of editlist file is described. UserPlaylistName is the user-defined name of the editlist file. The maximum length shall be 100 characters. User-defined name of the editlist is defined in editlist itself. The definition of UserPlaylistName is described in section 6.4.3 of “Specification of P2 Edit Metadata”.

CreationDate (indispensable if Slot exists)

CreationDate of editlist is described. CreationDate is the date when the editlist file was created.

Size (indispensable if Slot exists)

File size (bytes) of editlist is described.

6.11.4 Response Example

```
<P2Control>
  <Response>
    <Playlist>
      <FileName Slot="1" P2SerialNo.="AZN08H0005">0001ab</FileName>
      <UserPlaylistName>Video Letter</UserPlaylistName>
      <CreationDate>Wed Apr 17 20:55:48 2013</CreationDate>
      <Size>126</Size>
    </Playlist>
    <Playlist>
      <FileName Slot="1" P2SerialNo.="AZN08H0005">0002cd</FileName>
      <UserPlaylistName>Video Letter 2</UserPlaylistName>
      <CreationDate> Wed Apr 17 22:40:10 2013</CreationDate>
      <Size>345</Size>
    </Playlist>
  </Response>
</P2Control>
```

6.12 Query : Inquiry of video format for THUMB mode

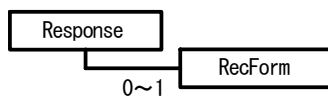
6.12.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <QueryType="play_setting"/>
</P2Control>
```

6.12.2 Expositon

Video format to be displayed after transition to THUMB mode can be acquired by specifying "play_setting". This query type is available only when <Thumb_RecModChg> value is not "None". (See 6.4 "Query : Inquiry of P2 environment variable")

6.12.3 Response



RecForm

RecForm describes the video format to display in THUMB mode.

The value is one of "MP4", "MOV" or "AVCHD" when <Thumb_RecModChg> value is "Mov_Mp4_Avchd".

6.12.4 Response Example

```
<P2Control>
  <Response>
    <RecForm>MP4</RecForm>
  </Response>
</P2Control>
```

6.13 Query : Inquiry of User SW setting list

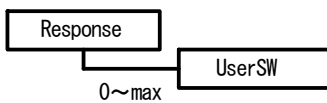
6.13.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <QueryType="userSW_setting"/>
</P2Control>
```

6.13.2 Expositon

By specifying "userSW_setting" in Query Type, it acquires User SW setting list of equipment.

6.13.3 Response



UserSW

UserSW describes the registered function of the user SW.

"No" attribute specifies the number of user SW as text string.

6.13.4 Response Example

```
<P2Control>
  <Response>
    <UserSW No="1">"AWB"</UserSW>
    <UserSW No="3">"ONE PUSH IRIS"</UserSW>
    <UserSW No="4">"ATW LOCK"</UserSW>
    <UserSW No="5">"E.I.S"</UserSW>
  </Response>
</P2Control>
```

6.14 Add command outline

Meta information can be given to the clip by using < Add > tag.

< Add > tag has <Target> tag to specify target and < ClipMetadata > tag to describe the content of meta data in the subordinate position.

As for the addition of meta information to the clip or shot under the record, only shot mark and text memo with offset are possible.

It depends on the P2 equipment status (stop, record, etc) which kind of meta information specified by < Target > is allowed to add.. However, when the P2 equipment is playing back, everything is refused as a state of Busy.

<Target>

There are following 3 ways to specify target for metadata.

- Use Slot Number and Clip Name (Section 6.15)
- Directly specify [picture under record].[Next picture which will be taken],[All picture which will be taken from next (Section 6.16)
- Specify local Time (Section 6.17)

6.15 Add : Specify target by slot number and clip name.

6.15.1 Send Data

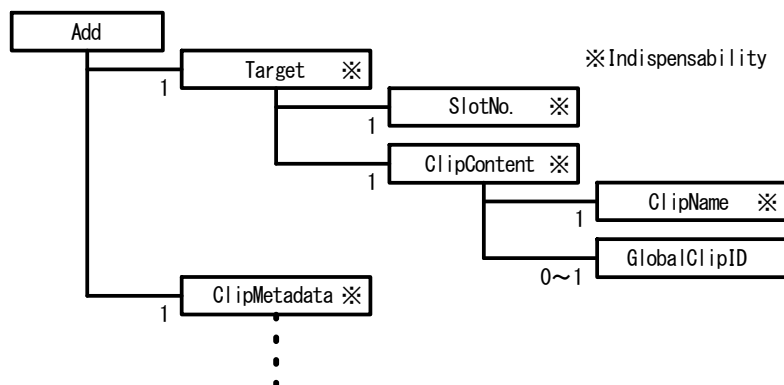
```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Add>
    <Target>
      <SlotNo.>Slot Number</SlotNo.>
      <ClipContent>
        <ClipName>Clip Name</ClipName>
        <GlobalClipID>Global Clip ID </GlobalClipID>
      </ClipContent>
    </Target>
    <ClipMetadata>
      Content of metadata for addition
    </ClipMetadata>
  </Add>
</P2Control>

```

6.15.2 Exposition

The object can be specified by specifying the slot number and the clip name. In this case, the composition below < Add > tag is as follows. There is no restriction in the order of describing each element.



SlotNo. (indispensable)

The slot number of the P2 equipment is described by the integer. The slot number corresponds to the one displayed on P2 equipment.

ClipName (indispensable)

The clip name that meta information adds is described. "Clip name" is four digit figure described in clip information as "ClipName" in P2 contents and a character string that consists of two digit alphanumeric character.

GlobalClipID

Global clip ID of the clip that meta information adds can be described. When this is described, meta information is added only when global clip ID is completely corresponding.

ClipMetadata

The content of given meta information is described. The definition of the tag contained below < ClipMetadata > tag is the same definition as the content explained by "Response" of section 6.7.3, except <MetaName> is invalid.

The content of given meta information is described. Two or more tag may be contained below < ClipMetadata > tag. All valid meta information is reflected.

6.15.3 Example of send data

Set "Opening Ceremony" as UserClipName to Clip name "0001AB" on Slot1 (Global Clip ID is not used)

```

<P2Control>
  <Auth>xxxx</Auth>
  <Add Scope="shot">
    <Target>
      <SlotNo.>1</SlotNo.>
      <ClipContent>

```

```

    <ClipName>0001AB</ClipName>
  </ClipContent>
</Target>
<ClipMetadata>
  <UserClipName>Opening Ceremony</UserClipName>
</ClipMetadata>
</Add>
</P2Control>

```

6.15.4 Limitations

I : P2 equipment is recording

If target clip specified by <Target> is recording, only addition for ShotMark and TextMemo are acceptable. Other commands are rejected. Response is error.

If target clip is not recording, all given meta information are rejected. Response is error.

II :P2 equipment is stopping

All operation for giving meta information is possible.

6.15.5 Response

The following responses are returned when succeeded..

```

<P2Control>
  <Response/>
</P2Control>

```

6.16 Add : Specify target using special character string

6.16.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Add>
    <Target>ALL or CURRENT </Target>
    <ClipMetadata>
      Contents of Meta information
    </ClipMetadata>
  </Add>
</P2Control>

```

6.16.2 Exposition

About Target to add meta information, if clip is following case, special character string can be used.

- Clip which is recording now
- Clip which will be recorded next
- All Clips which will be recorded later

Character string	Definition
CURRENT	Clip which is recording now
ALL	Clip which will be recorded next and later

It is the same as the description method of the explanation with the same name tag of section 6.7.3 for the description of the content of meta information below < ClipMetadata > tag.

6.16.3 Example of send data

Set Scene No =3 ,take number =1 to clips which will be recorded next and later

```
<P2Control>
  <Auth>xxxx</Auth>
  <Add>
    <Target>ALL</Target>
    <ClipMetadata>
      <Senario>
        <ProgramName/>
        <SceneNo.>3</SceneNo.>
        <TakeNo.>1</TakeNo.>
      </Senario>
    </ClipMetadata>
  </Add>
</P2Control>
```

6.16.4 Limitation

If the P2 equipment is a stop condition when "CURRENT" is specified in < Target >, the instruction is refused and the error is returned.

When "CURRENT" is specified in <Target>,only ShotMark and TextMemo with Offset can be used. The command other than above two is refused and the error is returned. Moreover offset value for Textmemo shall be set "-1" only. Given text is attached at the time of receipt. Other than "-1" value, command is refused and the error is returned.

About "ALL",

When the P2 equipment is recording , meta information is not given to the clip under the record, but given to the next or later recorded clip.

The text memo with offset and a shot mark cannot be given. The command is refused when these are given and the error is returned. However, it is possible to give the text memo without offset as a text memo to the entire clip.

6.16.5 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

6.17 Add : Add Meta data by Time specified

6.17.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <Add>
    <Target>
      <Time.> time </Time>      <Device>
        <Manufacturer> manufacturer's name </Manufacturer>
        <SerialNo.> serial number </SerialNo.>
        <ModelName> model name </ModelName>
      </Device>
    </Target>
    <ClipMetadata>
      Meta information to add
    </ClipMetadata>
  </Add>
</P2Control>

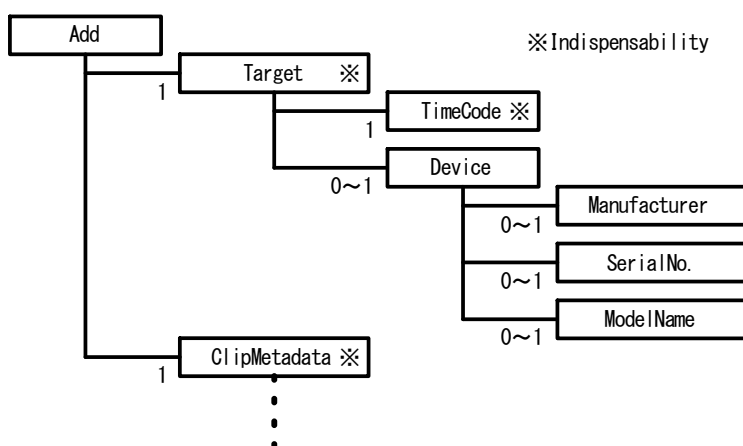
```

6.17.2 Exposition

The clip recorded for specific time can be specified by describing time in Target tag.

About the description of the content of meta information below < ClipMetadata > tag, it is the same as the description method where it explains by "Response" of section 6.7.3

The composition below < Add > tag is as follows. There is no restriction in the order of describing each element.



Time (indispensable)

The clip recorded for that time is indirectly specified by describing local time. When two or more corresponding clips exist, the new one at the date and time of creation is selected in that. However If device is specified in command, it does not matter what is the creation date / time.

The Unix time expressed in millisecond is used for the description of time. The millisecond that passes from 1970/1/1 At 00:00:00 UTC is described by the integral value.

Device

Information on the device where the clip is recorded is described. When this is specified, Meta information is reflected to the clip recorded at the specified time and specified device.

Content below < Device > tag is the same as the same name tag explained on "6.9 Query: the conversion of TimeCode/local time and clip name".

ClipMetadata

The content of given meta information is described. The definition of the tag contained below < ClipMetadata > tag is the same definition as the content explained by "Response" of section 6.7.3, except <MetaName> is invalid.

Two or more tag can be contained below < ClipMetadata > tag. All described meta information is reflected.

6.17.3 Example of Send Data

The text memo of "Applause" is given to the frame that corresponds at the local time in the clip which is recorded to 26 At Mar 2009 10:40:12 GMT.

```
<P2Control>
  <Auth>xxxx</Auth>
  <Add>
    <Target>
      <Time> 1238064012972</Time>
    </Target>
    <ClipMetadata>
      <MemoList>
        <Memo>
          <Offset>-1</Offset>
          <Text>Applause</Text>
        </Memo>
      </MemoList>
    </ClipMetadata>
  </Add>
</P2Control>
```

The example which Adds using GPS information in a 3776.24 m altitude, 138.7 degrees east, 35.4 degrees north, and 3 m of error distance.

```
<P2Control>
  <Auth>xxxx</Auth>
```



```

<Add>
  <Target>
    <Time>now</Time>
  </Target>
  <ClipMetadata>
    <Shoot>
      <Location>
        <Altitude>3776</Altitude>
        <Longitude>E138. 7</Longitude>
        <Latitude>N35. 4</Latitude>
        <Accuracy>E30</Accuracy>
      </Location>
    </Shoot>
  </ClipMetadata>
</Add>
</P2Control>

```

6.17.4 Limitation

When the P2 equipment is recording, Command is refused and the error is returned.

Moreover, when adding the text memo with an offset, only "-1" value is allowed in < Offset > tag. After it is automatically converted to offset value that corresponds at the local time specified with < Time > tag on the P2 equipment side and it is reflected in the clip. The command is failed other than "-1".

6.17.5 Response

The following responses are returned when addition of meta information is succeeded.

```

<P2Control>
  <Response/>
</P2Control>

```

6.18 DeckCtl command outline

P2 equipment can be controlled by using <DeckCtl> tag.

<DeckCtl> tag has "Type" attribute to specify the kind of action required. "Type" attribute can contain one of the following sections . If undefined value is contained, P2 equipment returns "Unknown Error" message in <Error> tag.

6.19 DeckCtl : Start Recording

6.19.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="rec"/>

```

```
</P2Control>
```

6.19.2 Exposition

Sending the “rec” control command from the external terminal makes the P2 equipment’s status change from “STOP” to “REC”. It corresponds to pushing the “REC button” on P2 equipment.

Sending the “rec” control command during P2 equipment’s “REC” state will be accepted without any warning. In that case, the command has no effect on the status of the P2 equipment.

6.19.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the recording state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- “Cannot REC”

This error indicates that P2 equipment couldn’t start recording. The typical reason why this happens is that recordable storage isn’t available in the P2 equipment.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

- "Operation Time Out"

This error indicates that P2 equipment couldn’t complete processing the command.

6.20 DeckCtl : Start Playing

6.20.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="play"/>
</P2Control>
```

6.20.2 Exposition

Sending the “play” control command from the external terminal makes the P2 equipment’s status change from “STOP” to “PLAY”. It corresponds to pushing the “PLAY button” on P2 equipment.

Sending the “play” control command during P2 equipment’s “PLAY” state will be accepted without any warning. In that case, P2 equipment’s status changes from “PLAY” to “PAUSE”.

6.20.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the playing state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

6.21 DeckCtl : Stop Recording/Playing

6.21.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="stop"/>
</P2Control>
```

6.21.2 Exposition

Sending the “stop” control command from the external terminal makes the P2 equipment’s status change from “REC” to “STOP”. It corresponds to pushing the “REC button” on P2 equipment.

Sending the “stop” control command during P2 equipment’s “STOP” state will be accepted without any warning. In that case, the command has no effect on the status of the P2 equipment.

6.21.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
```

```
</P2Control>
```

If the P2 equipment fails to change to the stop state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

- "Operation Time Out"

This error indicates that P2 equipment couldn’t complete processing the command.

6.22 DeckCtl : Fast Forward

6.22.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="farst_forward"/>
</P2Control>
```

6.22.2 Exposition

Sending the “fast_forward” control command from the external terminal makes the P2 equipment’s status change from “STOP” to “Fast Forward”. It corresponds to pushing the “FF button” on P2 equipment.

6.22.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the fast forward state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.23 DeckCtl : Rewind

6.23.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="rewind"/>
</P2Control>
```

6.23.2 Exposition

Sending the "rewind" control command from the external terminal makes the P2 equipment's status change from "STOP" to "Rewind". It corresponds to pushing the "REW button" on P2 equipment.

6.23.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the rewind state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.24 DeckCtl : Frame Advance

6.24.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
```

```
<DeckCtl Type="frame_advance">
  <Frame>frames</Frame>
</DeckCtl>
</P2Control>
```

6.24.2 Exposition

This command takes the specified frames forward/backward.

6.24.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the shuttle status, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.25 DeckCtl : Variable Speed Play

6.25.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="variable_speed_play">
    <Speed>speed</Speed>
  </DeckCtl>
</P2Control>
```

6.25.2 Exposition

Sending the "variable_speed_play" control command from the external terminal makes the P2 equipment's status change from "STOP" to "PLAY". It corresponds to pushing the "Play" on P2 equipment.

6.25.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the var state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.26 DeckCtl : Still

6.26.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="still">
  </DeckCtl>
</P2Control>
```

6.26.2 Exposition

Sending the "still" control command from the external terminal makes the P2 equipment's status change to "Still". It corresponds to pushing the "Search button" on P2 equipment.

6.26.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the still state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
```

```
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

6.27 DeckCtl : Pause

6.27.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="pause">
</DeckCtl>
</P2Control>
```

6.27.2 Exposition

Sending the “pause” control command from the external terminal makes the P2 equipment’s status change to “Pause”. It corresponds to pushing the “Pause button” on P2 equipment.

6.27.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to change to the pause state, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

6.28 DeckCtl : Cue up

6.28.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="cue_up">
    <TC>01:23:45:67</TC>
  </DeckCtl>
</P2Control>
```

6.28.2 Exposition

Cueing position is moved to the specified TimeCount.

6.28.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to cue up, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.29 DeckCtl : Next Clip

6.29.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="next_clip">
  </DeckCtl>
</P2Control>
```

6.29.2 Exposition

Cueing position is moved to the next shot.

6.29.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to cue up, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.30 DeckCtl : Prev Clip

6.30.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="prev_clip">
  </DeckCtl>
</P2Control>
```

6.30.2 Exposition

Cueing position is moved to the previous shot.

6.30.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to cue up, the following responses are returned.

```
<P2Control>
```

```
<Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

6.31 DeckCtl : Next Cue

6.31.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="next_cue">
</DeckCtl>
</P2Control>
```

6.31.2 Exposition

Cueing position is moved to the next registered cue up point.

6.31.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to cue up, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that “Remote Control Mode” is disabled in P2 equipment’s setting

- "Communication Busy"

This error indicates that P2 equipment couldn’t accept the command because previous command is still under processing.

6.32 DeckCtl : Prev Cue

6.32.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="prev_cue">
</DeckCtl>
</P2Control>
```

6.32.2 Exposition

Cueing position is moved to the previous registered cue up point.

6.32.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
  <Message>OK</Message>
</P2Control>
```

If the P2 equipment fails to cue up, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that P2 equipment denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in P2 equipment's setting

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.33 DeckCtl : Get TC

6.33.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="get_tc"/>
</P2Control>
```

6.33.2 Exposition

The present TimeCount value set up by P2 equipment is acquired. Since Time count acquires an instantaneous value, it may differ from it of P2 actual equipment.

6.33.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <TC>
      01:23:45:67
    </TC>
    <FrameUpperLimit>
      25
    </FrameUpperLimit>
  </Response>
</P2Control>
```

If the P2 equipment fails to get the TimeCode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.34 DeckCtl : Set TC

6.34.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="set_tc">
    <TC>
      01:23:45:67
    </TC>
  </DeckCtl>
</P2Control>
```

6.34.2 Exposition

A Time count value is preset to P2 equipment. When the mode of TC counter of P2 equipment is FreeRun, it is self-begun to run P2 equipment from the preset Time count value.

6.34.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to change the TimeCode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.35 **DeckCtl : Get UB**

6.35.1 **Send Data**

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="get_ub"/>
</P2Control>
```

6.35.2 **Exposition**

The present User's bit information value set up by P2 equipment is acquired.

6.35.3 **Response**

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <UB>
      AB:CD:EF:01
    </UB>
  </Response>
</P2Control>
```

If the P2 equipment fails to get the UsersBit, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.36 **DeckCtl : Set UB**

6.36.1 **Send Data**

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="set_ub">
    <UB>
```

```

    AB:CD:EF:01
  </UB>
</DeckCtl>
</P2Control>

```

6.36.2 Exposition

A User's bit information value is preset to P2 equipment.

6.36.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response/>
</P2Control>

```

If the P2 equipment fails to change the UsersBit, the following responses are returned.

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

“Error type” indicates what the trouble is.

6.37 DeckCtl : Set Playlist

6.37.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="playlist">
    <EditContent>
      Edit Content described in "Specification of P2 Edit Metadata ver.3.0"
    </EditContent>
  </DeckCtl>
</P2Control>

```

6.37.2 Exposition

A playlist is preset to P2 equipment. Playlist means an event list along the track written in XML. Playlist is described in the same format with <EditContent> tag described in “Specification of P2 Edit Metadata version 3.0” (Section 6.4.2), or later.

After setting the playlist, “Start Playing” command (6.20) must be called in order to play the list.

6.37.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to set the playlist, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.38 DeckCtl : Save Playlist (New)

6.38.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="playlist_save">
    <FileName Slot="SlotNo."/>
    <EditContent>
      Edit Content described in "Specification of P2 Edit Metadata ver.3.0"
    </EditContent>
  </DeckCtl>
</P2Control>
```

6.38.2 Exposition

Sending the “playlist_save” control command with specified slot number makes the P2 equipment save the playlist in the P2 card in the specified slot. File name used in P2 card is determined by P2 equipment automatically. And the file name determined by P2 equipment is informed in the response.

The Edit Content saved in the playlist must be described in <EditContent> tag and it must be written in the same format with <EditContent> tag described in “Specification of P2 Edit Metadata version 3.0” (Section 6.4.2), or later.

6.38.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <FileName Slot="SlotNo.">FileName</FileName>
  </Response>
</P2Control>
```

The file’s name and Slot Number that was used to save the playlist are described in the response.

If the P2 equipment fails to save the playlist, the following responses are returned.


```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.39 DeckCtl : Save Playlist (Overwrite)

6.39.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="playlist_save">
    <FileName Slot="SlotNo.">FileName</FileName>
    <EditContent>
      Edit Content described in "Specification of P2 Edit Metadata ver.3.0"
    </EditContent>
  </DeckCtl>
</P2Control>
```

6.39.2 Exposition

Sending the “playlist_save” control command with specified slot number and the file’s name makes the P2 equipment overwrite the existing playlist in the P2 card.

The Edit Content saved in the playlist must be described in <EditContent> tag and it must be written in the same format with <EditContent> tag described in “Specification of P2 Edit Metadata version 3.0” (Section 6.4.2), or later.

6.39.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <FileName Slot="SlotNo.">FileName</FileName>
  </Response>
</P2Control>
```

The file’s name and Slot Number that was used to save the playlist are described in the response.

If the P2 equipment fails to save the playlist, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.40 DeckCtl : Remove Playlist

6.40.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="playlist_remove">
    <FileName Slot="SlotNo.">FileName</FileName>
  </DeckCtl>
</P2Control>
```

6.40.2 Exposition

Sending the "playlist_remove" control command with specified slot number and the file's name makes the P2 equipment erase the existing playlist in the P2 card.

6.40.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to remove the playlist, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is.

6.41 DeckCtl : EditCopy

6.41.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="edit_copy">
    <Slot>SlotNo.</Slot>
    <AudioChannel>NONE or CH5-8</AudioChannel>
    <EditContent>
      Edit Content described in "Specification of P2 Edit Metadata ver.3.0"
    </EditContent>
  </DeckCtl>
</P2Control>
```

6.41.2 Exposition

Sending the “edit_copy” control command makes the P2 equipment start creating new clip from the playlist described in <EditContent> tag.

Slot

Slot Number to store the clips that are created by EditCopy.

AudioChannel

When this value is set to “NONE”, 5th -8th audio channels aren’t copied to newly created clips. When this value is set to “CH5-8”, 5th -8th audio channels are copied to newly created clips.

EditContent

EditContent that is used to create new clips. EditContent is described in manner of <EditContent> tag explained in “Specification of P2 Edit Metadata version 3.0” , or later.

Difference between EditCopy and Playlist Export :

EditCopy (6.41)	Creating new clip from a playlist.
Playlist Export (6.42)	Exporting events registered in a playlist to a P2 card. (If export has been performed, a playlist file is also created on the export destination automatically)

6.41.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <TaskID>TaskID</TaskID>
  </Response>
</P2Control>
```

“TaskID” is ID that is assigned to EditCopy Task. This value is used to cancel the task (6.43) and to get the progress of task (6.44).

If the P2 equipment fails to start EditCopy, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.42 DeckCtl : Playlist Export

6.42.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type=”playlist_export”>
```

```

<Slot>SlotNo.</Slot>
<EditContent>
  Edit Content described in "Specification of P2 Edit Metadata ver.3.0"
</EditContent>
</DeckCtl>
</P2Control>

```

6.42.2 Exposition

Sending the "playlist_export" control command makes the P2 equipment starts exporting events registered in <EditContent> tag and create a playlist file.

6.42.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response>
    <TaskID>TaskID</TaskID>
  </Response>
</P2Control>

```

"TaskID" is ID that is assigned to Playlist-Export Task. This value is used to cancel the task (6.43) and to get the progress of task (6.44).

If the P2 equipment fails to start Playlist-Export, the following responses are returned.

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

"Error type" indicates what the trouble is.

6.43 DeckCtl : Stop Editcoly/Playlist Export

6.43.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="cancel">
    <TaskID>TaskID</TaskID>
  </DeckCtl>
</P2Control>

```

6.43.2 Exposition

Tasks that are created by EditCopy (6.41) or Playlist Export (6.42) can be cancelled by sending “cancel” command. Task to cancel is specified by TaskID that is informed by the response of EditCopy/Playlist Export.

6.43.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to cancel the task, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.44 DeckCtl : Get Progress of EditCopy/Playlist Export

6.44.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="task_status">
    <TaskID>TaskID</TaskID>
  </DeckCtl>
</P2Control>
```

6.44.2 Exposition

Results and progress of tasks that are created by EditCopy (6.41) and Playlist Export (6.42) can be gotten by sending “task_status” command. Task is specified by TaskID that is informed by the response of EditCopy/Playlist Export.

6.44.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <TaskID>TaskID</TaskID>
    <Status>Status</Status>
    <Message>Message</Message>
  </Response>
</P2Control>
```

TaskID

This value is same with TaskID specified in Send Data.

Status

This value indicates current status of task.

Value	Meanings
COMPLETE	The task has completed successfully
ERROR	The task was ended unsuccessfully
x%	x is integer value. This value shows the percentage of progress completed.

Message

Message describes the detailed information. When “Status” is “ERROR”, this information describes why the task failed. When “Status” is “COMPLETE” or “x%”, <Message> tag can be omitted.

If the P2 equipment fails to get information, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.45 DeckCtl : Set Repeat Play mode

6.45.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="set_repeat_play">
    <REPEAT>ON or OFF</REPEAT>
  </DeckCtl>
</P2Control>
```

6.45.2 Exposition

Repeat play mode is set to P2 equipment.

Character string	Definition
ON	Repeat play mode
OFF	Normal play mode

6.45.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to set repeat play mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.46 DeckCtl : Get Repeat Play mode

6.46.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="get_repeat_play"/>
</P2Control>
```

6.46.2 Exposition

Repeat play mode in P2 equipment is acquired.

6.46.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <REPEAT>ON or OFF</ REPEAT >
  </Response>
</P2Control>
```

If the P2 equipment fails to get the repeat play mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.47 DeckCtl : Get GUI mode

6.47.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
```

```
<DeckCtl Type="get_gui_play"/>
</P2Control>
```

6.47.2 Exposition

GUI mode in P2 equipment is acquired.

6.47.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <REPEAT>GUI mode</ REPEAT >
  </Response>
</P2Control>
```

GUI mode

Character string	Definition
PLAY	Play display
THUMBNAIL GUI	Thumbnail GUI display
THUMBNAIL PLAY	Play display from thumbnail GUI.

If the P2 equipment fails to get GUI mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.48 DeckCtl : Clip select

6.48.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="clip_select">
    <SlotNo.>Slot Number</SlotNo.>
    <ClipContent>
      <ClipName>Clip Name</ClipName>
      <GlobalClipID>Global Clip ID </GlobalClipID>
    </ClipContent>
  </DeckCtl>
</P2Control>
```


6.48.2 Exposition

The object can be specified by specifying the slot number and the clip name. The specified clip is selected and the cueing position is the top of this clip.

It only works on GUI off mode.

6.48.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to set clip select mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.49 DeckCtl : Clip select off

6.49.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="clip_select_off">
  </DeckCtl>
</P2Control>
```

6.49.2 Exposition

Clip selection mode is off. Cueing position is the top of the all clips and the state is stop.

6.49.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to cancel the clip select mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.50 DeckCtl : Get clip select status

6.50.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="get_clip_select">
  </DeckCtl>
</P2Control>
```

6.50.2 Exposition

Clip select status is acquired.

6.50.3 Response

The following responses are returned on clip selection mode,

```
<P2Control>
  <Response>
    <SlotNo.>Slot Number</SlotNo.>
    <ClipContent>
      <ClipName>Clip Name</ClipName>
      <GlobalClipID>Global Clip ID </GlobalClipID>
    </ClipContent>
  </Response>
</P2Control>
```

The following responses are returned on normal mode,

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to get the clip select mode, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.51 DeckCtl : User Switch

6.51.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckCtl Type="user_switch">
    <Button>Button Name</Button>
  </DeckCtl>
</P2Control>
```

6.51.2 Exposition

Sending user_switch command is same as pressing user switch button on equipment (Except 1 to 4).

Button Name corresponds with the response of UserSwitch/Button.

Remote commands do not guarantee the operation of all functions.

6.51.3 Response

Success is returned if Button Name is valid, not success propriety of operation.

```
<P2Control>
  <Response/>
</P2Control>
```

Error is returned in case that Button Name is invalid, or that command is not acceptable.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

“Error type” indicates what the trouble is.

6.52 DeckConfig command outline

Configurations of P2 equipment can be controlled by using <DeckConfig> tag.

<DeckConfig> tag has “Type” attribute to specify the kind of action required. The “Type” attribute can specify one of the following sections. If other value is contained, P2 equipment returns “Unknown Error” message in <Error> tag.

Format of *Configuration texts* specified in each section below is same as each configuration file. But if white space characters in *Configuration texts* have meanings, they shall be replaced as below, because most XML schemer ignores or deletes white space characters.

Character	Replaced string
TAB		

LF	

CR	

If *Configuration texts* is XML format, special characters such as "<", ">", "&" etc. should not be replaced, and XML declaration (<?xml> tag) and DTD(<!DOCTYPE> tag) shall not be included.

6.53 DeckConfig : Get Scene File

6.53.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_scene_file"/>
</P2Control>
```

6.53.2 Exposition

Current Scene File setting of P2 equipment can be taken out by specifying "get_scene_file" command.

6.53.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <SceneFile>
      Configuration texts
    </SceneFile>
  </Response>
</P2Control>
```

"*Configuration texts*" is based on the internal specification of P2 equipment.

The contents change with models.

If the P2 equipment fails to get the Scene File, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following sentences.

6.54 DeckConfig : Put Scene File

6.54.1 Send Data

```
<P2Control>
```

```

<Auth>encrypted_password</Auth>
  <DeckConfig Type="put_scene_file">
    <SceneFile>
      Configuration texts
    </SceneFile>
  </DeckConfig>
</P2Control>

```

6.54.2 Exposition

By "put_scene_file" command, Scene file setting is overwritten to internal memory of P2 equipment according to *Configuration texts*

6.54.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response/>
</P2Control>

```

If the P2 equipment fails to put the Scene File, the following responses are returned.

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

"Error type" indicates what the trouble is. This string can contain following sentences.

6.55 DeckConfig : Get User File

6.55.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_user_file"/>
</P2Control>

```

6.55.2 Exposition

Current User File setting of P2 equipment can be taken out by specifying "get_user_file" command.

6.55.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response>
    <UserFile>

```

```

    Configuration texts
  </UserFile>
</Response>
</P2Control>

```

"Configuration texts" is based on the internal specification of P2 equipment.

The contents change with models.

If the P2 equipment fails to get the UserFile, the following responses are returned.

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

"Error type" indicates what the trouble is. This string can contain following sentences.

6.56 DeckConfig : Put User File

6.56.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_user_file">
    <UserFile>
      Configuration texts
    </UserFile>
  </DeckConfig>
</P2Control>

```

6.56.2 Exposition

By "put_user_file" command, User file setting is overwritten to internal memory of P2 equipment according to *Configuration texts*

6.56.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response/>
</P2Control>

```

If the P2 equipment fails to change the User File, the following responses are returned.

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

"Error type" indicates what the trouble is. This string can contain following sentences.

6.57 DeckConfig : Get SmartUI

6.57.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_smart_ui"/>
    <ItemType>ItemType</ItemType>
  </DeckConfig>
</P2Control>
```

6.57.2 Exposition

One or more ItemType are specified and the preset value of P2 equipment is acquired.

All the information (SmartUI preset value) can be taken by specifying "ALL" as ItemType.

ItemType	Meaning
AudioMonitorSelect	
SceneFileNumber	
AudioMixChannel	
AudioMixSelect	
AudioChannelLevel	
AudioChannelLevelUser	
AudioSelectCntrol	
AudioInputChannel	
TCRunMode	
VideoDownConvMode	
VideoMonitorSelectHD	
VideoMonitorSelectSD	
VideoMonitorCharactor	
VideoMonitorZebra	
VideoMonitorOut	
LCDControl	
WBControl	

VFRControl	
All	All specification

6.57.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <ItemType>
      <SubItem>
        <value>value</value>
        <range>range</range>
        <notes>notes</notes>
        <memo>freememo</memo>
      </SubItem>
    </ItemType>
  </Response>
</P2Control>
```

<value> is the present preset value.

<range> is the variable range. "-" means the minimum-maximum. "," is dispersed are meant.

<notes> has described the details of a preset value. The format of <notes> is "value:(colon)detail,(comma)"

The examples of <notes> are "0:ON, 1:OFF", "0:AUTO, 1:MANU", etc.

<memo> is an item of free description.<SubItem> may not exist by <ItemType>.

ItemType	SubItem			
AudioMonitorSelect	—	—	—	—
SceneFileNumber	—	—	—	—
AudioMixChannel	—	—	—	—
AudioMixSelect	—	—	—	—
AudioChannelLevel	Channel1	Channel2	Channel3	Channel4
AudioChannelLevelUser	Channel1	Channel2	Channel3	Channel4
AudioSelectCntrol	Channel1	Channel2	Channel3	Channel4
AudioInputChannel	Channel1	Channel2	Channel3	Channel4
TCRunMode	—	—	—	—

VideoDownConvMode	—	—	—	—
VideoMonitorSelectHD	—	—	—	—
VideoMonitorSelectSD	—	—	—	—
VideoMonitorCharactor	—	—	—	—
VideoMonitorZebra	—	—	—	—
VideoMonitorOut	—	—	—	—
LCDControl	Contrast	Light	—	—
WBControl	VAR	—	—	—
VFRControl	VFRMode	Framerate	—	—

If the P2 equipment fails to get the Item of smartUI, the following responses are returned.

```
<P2Control>
  <Error>
    <ItemType>
      Error type
    </ItemType>
  </Error>
</P2Control>
```

“Error type” indicates what the trouble is. This string can contain following sentences.

6.57.4 Example of “Send Data” and “Response”

The example of a setting of "Send Data" in the case of <ItemType>=AudioChannelLevel

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_smart_ui">
    <ItemType>AudioChannelLevel</ItemType>
  </DeckConfig>
</P2Control>
```

The example of "Response" in the case of <ItemType>=AudioChannelLevel

The following responses are returned when succeed.

There is no item of <notes> in "Response" in the case of <ItemType>=AudioChannelLevel.

```
<P2Control>
```

```

<Response>
  <AudioChannelLevel>
    <Channel1>
      <value>70</value>
      <range>0-100</range>
      <memo></memo>
    </Channel1>
    <Channel2>
      <value>70</value>
      <range>0-100</range>
      <memo></memo>
    </Channel2>
    <Channel3>
      <value>70</value>
      <range>0-100</range>
      <memo></memo>
    </Channel3>
    <Channel4>
      <value>70</value>
      <range>0-100</range>
      <memo></memo>
    </Channel4>
  </AudioChannelLevel>
</Response>
</P2Control>

```

The example of setting of "Send Data" in the case of <ItemType>=VideoDownConvMode

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_smart_ui"/>
    <ItemType>VideoDownConvMode</ItemType>
  </DeckConfig>
</P2Control>

```

The example of "Respsns" in the case of <ItemType>=VideoDownConvMode

The following responses are returned when succeed.

```

<P2Control>
  <Response>
    <VideoDownConvMode>
      <value>0</value>

```

```

    <range>0-2</range>
    <notes>0:SIDE CROP,1:LETTER BOX,2:SQUEEZE</notes>
    <memo></memo>
  </VideoDownConvMode>
</Response>
</P2Control>

```

6.58 DeckConfig : Put SmartUI

6.58.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_smart_ui">
    <ItemType>
      <SubItem>
        <value></value>
      </SubItem>
    </ItemType>
  </DeckConfig>
</P2Control>

```

6.58.2 Exposition

One or more ItemType are specified and the information on P2 equipment (SmartUI value) is set up.

6.58.3 Response

The following responses are returned when succeed.

```

<P2Control>
  <Response/>
</P2Control>

```

If the P2 equipment fails to change the Item of smartUI, the following responses are returned.

```

<P2Control>
  <Error>
    <ItemType>
      Error type
    </ItemType>
  </Error>
</P2Control>

```

"Error type" indicates what the trouble is. This string can contain following sentences.

6.58.4 Example of "Send Data"

The example of setting of "Send Data" in the case of <ItemType>=AudioChannelLevel

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_smart_ui">
    <AudioChannelLevel>
      <Channel1>
        <value>70</value>
      </Channel1>
      <Channel2>
        <value>70</value>
      </Channel2>
      <Channel3>
        <value>70</value>
      </Channel3>
      <Channel4>
        <value>70</value>
      </Channel4>
    </AudioChannelLevel>
  </DeckConfig>
</P2Control>

```

The example of setting of "Send Data" in the case of <ItemType>=VideoDownConvMode

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_smart_ui">
    <VideoDownConvMode>
      <value>0</value>
    </VideoDownConvMode>
  </DeckConfig>
</P2Control>

```

6.59 DeckConfig : Set Remote Mode

6.59.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="set_remote" >
    <Mode>ON or OFF</Mode>
  </DeckConfig>
</P2Control>

```

6.59.2 Exposition

This command changes ON/OFF of remote setting Mode by <Mode> tag value. After remote setting mode is ON, equipment can accept setting commands(described later).

If Equipment is already specified mode, it just replies success.

In the camera setting change mode, operation by the camera body switch will be partially restricted.

Remote setting mode is automatically canceled if “Nop” command (described later) does not arrived for 10 seconds.

Mode

Character string	Definition
ON	Remote setting mode
OFF	Normal Mode

6.59.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response>
    <Group>GroupValue</Group>
    <Model>ModelValue</Model>
    <Protocol>1-255</Protocol>
  </Response>
</P2Control>
```

It includes model group, model name, protocol version in <Group><Model><Protocol> tags for each.

Group

GroupValue	Meanings
1	Varicam Series

Model

ModelValue	Meanings
1	Varicam35
2	Varicam35 + Codex
3	VaricamHS
4	VaricamLT

This information can be gotten by UDP(TYPE=0x0C VaricamStatus Notification).

If Equipment can not change remote setting mode, it replies error as below.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type is asfollowing:

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

6.60 **DeckConfig : Nop**

6.60.1 **Send Data**

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="nop" />
</P2Control>
```

6.60.2 **Exposition**

This command does nothing except to prevent to auto-cancel of Remote setting Mode. At least one client must send thiscommand continuously.

6.60.1 **Response**

In case of success:

```
<P2Control>
  <Response/>
</P2Control>
```

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type is as folowing

- "Remote Setting Mode Off"

Remote setting is not available because mode is off.

6.61 DeckConfig : Get Setting List

6.61.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_setting_list" >
    <Name>MenuType</Name>
  </DeckConfig>
</P2Control>
```

6.61.2 Exposition

This command gets setting list specified by <Name> tag.

It is able to get dynamic information such as selectable table number or items.

This command is available even remote setting mode is OFF.

For setting values that switch multiple tables according to setting, it is an inquiry about the table in setting at the time of inquiry.

Name

Character string	Definition
FPS	Getting FPS table of VFR
SHUTTER-Deg	Getting SHUTTER SPEED table (deg) *Don't send if equipment's SHUTTER mode is "sec"
SHUTTER-Sec	Getting SHUTTER SPEED table (sec) *Don't send if equipment's SHUTTER mode is "deg"
WB	Getting White Balance adjusting table
LUTFILES	Getting list of 3DLUT files *Not available during Rec or Playback
CDLFILES	Getting list of CDL files *Not available during Rec or Playback

6.61.3 Response

In case of success:

```
<P2Control>
  <Response>
    <Table Index="1" Enable="false" Select="true">DataName1</Table>
    <Table Index="2" Enable="true">DataName2</Table>
    ...
  </Response>
</P2Control>
```

Each <Table> tag includes displayed value of current setting.

Index value of setting is described as "Index" attribute.

“Enable” attribute is set to “true” or “false”. If “true”, the item is selectable. If “false”, the item is invalid and is displayed GRAY-OUT on most equipments

To select a new setting or execute a process based on the acquired table, use DeckConfig: Set Menu with specifying the new information to the TableData tag.

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following sentences

The types of Error type are as follows.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Not Supported"

Requested command is not supported.

- "Name is not supported"

Aquiring the list of specified Name is not supported.

Get list of the specified Name is not supported.

6.62 DeckConfig : Get Menu

6.62.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_menu" >
    <ID>Menu ID</ID>
  </DeckConfig>
</P2Control>
```

6.62.2 Exposition

This command queries the setting value of the menu ID specified by the ID tag.

This command is available if the equipment is not camera setting change mode.

Menu ID is represented by 4 digit hexadecimal number. (0x is not required).

See documents of each model for the support status of menu IDs.

As for the menu setting value, there is also a mechanism to periodically notify by UDP (TYPE = 0x0C VaricamStatus Notification), so the use of this command should be minimized unless there is no reason such that UDP can not be used or UDP does not support menu ID

6.62.3 Response

In case of success:

```
<P2Control>
  <Response>
    <MenuData Id="MenuID">Value</MenuData>
  </Response>
</P2Control>
```

A menu ID is included in the Id attribute, and a setting value is included in the Text of the MenuData tag.

When the set value is a numeric value or a defined value, it is expressed by hexadecimal number (the number of digits varies for each menu ID) for each ID and setting value.

```
<P2Control>
  <Response>
    <MenuData Id="MenuID" Type="string">StringData</MenuData>
  </Response>
</P2Control>
```

When the setting value is a character string, Type="string" attribute is added to the MenuData tag and a character string is set to StringData.

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following messages.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Invalid Parameter"

Specified Parameter is invalid.

- "ID is not supported"

Acquisition of the specified MenuID is not supported.

6.63 DeckConfig : Set Menu

6.63.1 Send Data

Setting menu value by menu ID :

```
<P2Control>
  <Auth>encrypted_password</Auth>
```

```

<DeckConfig Type="set_menu" >
  <MenuData Id="MenuID">Value</MenuData>
</DeckConfig>
</P2Control>

```

Setting menu string by menu ID :

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="set_menu" >
    <MenuData Id="MenuID" Type="string">StringData</MenuData>
  </DeckConfig>
</P2Control>

```

Setting menu string by menu ID :

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="set_menu" >
    <TableData Name="Name" Index="Index">DataName</TableData>
  </DeckConfig>
</P2Control>

```

Selecting new setting from table (without saving data) :

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="set_menu" >
    <TableData Name="Name" Index="Index" Save="false">DataName</TableData>
  </DeckConfig>
</P2Control>

```

6.63.2 Exposition

This is a command for changing the camera setting mode that requests the camera to set the menu ID and set value with the Id attribute of the MenuData tag and Text.

The menu ID and set value are expressed in hexadecimal (the number of digits of the setting value will change).

To specify a character string in the setting value, it requires to add the Type="string" attribute to the MenuData tag.

See documents of each model for menu ID and support status.

It is necessary to confirm the status by response or UDP after setting for several menu ID, because it may occur irregular cases such as not acceptable, taking long time, autonomic setting change, etc.

You can also select the value you want to set from the setting list by specifying Name, Index, and DataName in the DeckConfig: Get Setting List command with the Name / Index attribute and Text of the TableData tag instead of the MenuData tag.

In addition, only the operation value can be changed by omitting Index and adding "Save=false" attribute to TableData format only. When you turn off the camera or turn DeckConfig: Set Remote Mode off, it will return before change if only operation value is changed

6.63.3 Response

In case of success:

```
<P2Control>
  <Response/>
</P2Control>
```

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following messages

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Remote Setting Mode Off"

It can not be set because the camera setting change mode is not set.

- "Invalid Parameter"

Specified Parameter is invalid.

- "Not supported"

Specified setting is not supported.

- "ID is not supported"

Specified MenuID setting is not supported.

- "Value is not supported"

Specified setting value is not supported or out of range for the MenuID.

- "Name is not supported"

Setting of the specified Name is not supported.

- "Index and DataName is mismatched"

The specified Index and DataName do not match

- "Load Failed"

Failed to read from the SD card.(When LUTFILES / CDLFILES is selected in TableData)

6.64 DeckConfig : Add Menu

6.64.1 Send Data

```

<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="add_menu" >
    <TableData Name="Name" Index="Index">DataName</TableData>
  </DeckConfig>
</P2Control>

```

6.64.2 Exposition

This command sends add request of setting data to setting list by specifying Name, Index attribute, and DataName text that comes from DeckConfig:Get Setting List command response.

The Index attribute is mandatory. Specify the index of the value to be overwritten when the number of registered tables is max.

(As for the specification of Varicam, Index becomes the selection position just before ADD state)

6.64.3 Response

In case of success:

```

<P2Control>
  <Response/>
</P2Control>

```

In case of error:

```

<P2Control>
  <Error>Error type</Error>
</P2Control>

```

Error type can contain following messages.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Remote Setting Mode Off"

Can not set because Remote Setting mode of equipment is Off..

- "Invalid Parameter"

Specified Parameter is invalid.

- "Name is not supported"

Setting operation for specified Name is not supported.

- "Value is not supported"

Specified value is not supported or out of range.

6.65 DeckConfig : Get Next MenuData

6.65.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="get_next_menusdata" >
    <TableData Name="Name" Dir="Dir" Unit="Unit"/>
  </DeckConfig>
</P2Control>
```

6.65.2 Exposition

This command is for the camera setting change mode which specifies the Name in the DeckConfig: Get Setting List command with the Name attribute of the TableData tag, specifies the previous or next with the Dir attribute, and acquires the next possible setting value candidate.

In the Unit attribute, it is also possible to specify a value range according to the Name attribute.

The operation value also changes with this command, which has the same effect as the Save attribute false of DeckConfig: Set Menu.

• Name attribute

Character string	Definition
FPS	FPS
SHUTTER-Sec	Shutter speed(sec)
SHUTTER-Deg	Shutter speed(deg)
WB	White Balance
WB-Gmg	White Balance(GMg)

• Dir attribute

Character string	Definition
Prev	Aquire previous condidate
Next	Aquire next condidate
MaxMin	Aquire max or min value *Min value in case that present is max. Max value in other case.

• Unit attribute

Character string	FPS	SHUTTER (Denominator changes for Sec)	WB	WB-Gmg
1	the one's place	the first decimal place unit	the ten's place	the first decimal place unit

2	the ten's place	the one's place	the hundred's place	the one's place
3	—	the ten's place	the thousand's place	—
4	—	the hundred's place	—	—

6.65.3 Response

In case of success:

Candidate string returns in Table tag

*All setting data returns for SHUTTER or WHITE setting.

```
<P2Control>
  <Response>
    <Table>StringData</Table>
  </Response>
</P2Control>
```

Same value is responded for prev/next command when the value is max/min.

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following messages. • "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Remote Setting Mode Off"

Can not set because Remote Setting mode of equipment is Off..

- "Invalid Parameter"

Specified Parameter is invalid.

- "Name is not supported"

Setting operation for specified Name is not supported.

- "Range is not supported"

Setting operation for specified Range is not supported.

6.66 DeckConfig : Save Color To SD

6.66.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="save_color_to_sd" >
    <SaveData Type="SaveType">FileName</SaveData>
  </DeckConfig>
</P2Control>
```

6.66.2 Exposition

Specify target type at Type attribute of SaveData tag, and filename at tag text value(without file extension).

SaveType string	Definition
CDL	Saveing target is CDL
3DLUT	Saveing target is 3D LUT

. Escape character in XML String is sanitized

6.66.3 Response

In case of success:

```
<P2Control>
  <Response/>
</P2Control>
```

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following messages.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Remote Setting Mode Off"

.Can not set because Remote Setting mode of equipment is Off.

- "Invalid Parameter"

Specified Parameter is invalid.

- "TYPE is not supported"

Specified TYPE is not supported. • "No Card"

SD card does not exist.

- "Write Protected"
SD card is write-protected.
- "Save Failed"
Failed to write to SD card.
- "Already Exist"
Same name file already exists.

6.67 DeckConfig : Delete Menu

6.67.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="del_menu" >
    <TableData Name="Name" Index="Index">DataName</TableData>
  </DeckConfig>
</P2Control>
```

6.67.2 Exposition

This command sends request of deleting setting data from setting list by specifying Name, Index attribute, and DataName text.that comes from DeckConfig:Get Setting List command response.

6.67.3 Response

In case of success:

```
<P2Control>
  <Response/>
</P2Control>
```

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

Error type can contain following messages.

- "Communication Busy"
This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.
- "Remote Setting Mode Off"
Can not set because Remote Setting mode of equipment is Off..

- "Invalid Parameter"
Specified Parameter is invalid.
- "Name is not supported"
Deleting operation for specified Name is not supported.
- "Index and DataName is mismatched"
Specified Index and DataName is mismatched."

6.68 DeckConfig : Change System Mode

6.68.1 Send Data

- Varicam35/HS

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="change_system_mode" >
    <Frequency>Value</Frequency>
    <VRaw>Value</VRaw>
    <MainPixel>Value</MainPixel>
    <MainCodec>Value</MainCodec>
    <SubCodec>Value</SubCodec>
    <VfrSw>Value</VfrSw>
    <VfrSubRec>Value</VfrSubRec>
    <HighSpeed>Value</HighSpeed>
  </DeckConfig>
</P2Control>
```

- VaricamLT

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="change_system_mode" >
    <Frequency>Value</Frequency>
    <SdiRaw>Value</SdiRaw>
    <MainPixel>Value</MainPixel>
    <MainCodec>Value</MainCodec>
    <ProxyCodec>Value</ProxyCodec>
    <VfrSw>Value</VfrSw>
    <VfrProxyRec>Value</VfrProxyRec>
    <ProxySlot>Value</ProxySlot>
  </DeckConfig>
</P2Control>
```

6.68.2 Exposition

This command sends request of changing System Format and of restarting the equipment.

If this command is succeeded, network is disconnected and DeckConfig:Set Remote is set to OFF because of restarting.

Available value sets of System Format are different depending on models(See below).

Tags' value is hex string("0x" is not necessary).

See Menu Specification documents of each model for setting value of each Menu ID.

Tag	Definition	Varicam35/HS	VaricamLT	MenuID
Frequency	System Frequency	○	○	0xF19E
VRaw	V RAW Recording	○		0xA306
SdiRaw	SDI RAW Recording		○	0x262D
MainPixel	Resolution of Main channel recording	○	○	0xC4C3
MainCodec	Codec of Main channel recording	○	○	0xC7C2
SubCodec	Codec of Sub channel recording	○		0x4773
VfrSw	VFR Setting	○	○	0x48D1
ProxyCodec	Codec of Proxy recording		○	0xBD36
VfrSubRec	VFR recording mode of Sub channel	○		0x4C2D
VfrProxyRec	VFR recording mode of Proxy		○	0xD81B
ProxySlot	Recording target slot of Proxy		○	0xC804
HighSpeed	VFR High speed mode	○		0x9640

6.68.3 Response

In case of success:

```
<P2Control>
  <Response/>
</P2Control>
```

*Equipment restarts after sending response.

In case of error:

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

*Equipment does not restart.

Error type can contain following messages.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Remote Setting Mode Off"

Can not set because Remote Setting mode of equipment is Off..

- "Invalid Parameter"

Specified Parameter is invalid.

- "Value is not supported"

Specified value(combination) is not supported or out of range.

6.69 DeckConfig : CDL File

6.69.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_CDL_file">
    <CDL_File>
      Configuration texts
    </CDL_File>
  </DeckConfig>
</P2Control>
```

6.69.2 Exposition

CDL(Color Decision List) is one of color grading method.

By "put_CDL_file" command, Color setting is overwritten to internal memory of P2 equipment according to *Configuration texts*

6.69.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to put the CDL File, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following (or other) sentences.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Operation Time Out"

This error indicates that P2 equipment couldn't complete processing the command.

6.70 DeckConfig : 3D LUT File

6.70.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <DeckConfig Type="put_3D_LUT_file">
    <LUT_3D_File>
      Configuration texts
    </LUT_3D_File >
  </DeckConfig>
</P2Control>
```

6.70.2 Exposition

3D LUT(Look Up Table) is one of color grading method.

By "put_3D_LUT_file" command, Color setting is overwritten to internal memory of P2 equipment according to *Configuration texts*

Configuration texts require escaping according to the XML standard.

6.70.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <Response/>
</P2Control>
```

If the P2 equipment fails to put the 3D_LUT File, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
</P2Control>
```

"Error type" indicates what the trouble is. This string can contain following (or other) sentences.

- "Communication Busy"

This error indicates that P2 equipment couldn't accept the command because previous command is still under processing.

- "Operation Time Out"

This error indicates that P2 equipment couldn't complete processing the command.

6.71 CamCtl command outline

Camera functions can be controlled by using <CamCtl> tag.

Normally, <CamCtl> tag has only Command value. But some special commands have attributes in CamCtl tag. Command List is defined in other document. If undefined value is contained, Camera system returns “Unknown Error” message in <Error> tag. CamCtl is exceptional command that doesn't have Response tag at successful completion.

6.72 CamCtl : Camera system control.

6.72.1 Send Data

```
<P2Control>
  <Auth>encrypted_password</Auth>
    <SessionID> Session_ID </ SessionID >
    <CamCtl> Command </CamCtl>
    <CamCtl> Command </CamCtl>
    ....
</P2Control>
```

Multiple CamCtl tags can be included. SessionID tag is optional. Some Commands bring with attributes in CamCtl tag.

6.72.2 Exposition

Sending the “**Command**” control command from the external terminal may make the Camera system's status change.

6.72.3 Response

The following responses are returned when succeed.

```
<P2Control>
  <CamCtl> Command </CamCtl>
  <CamCtl> Command </CamCtl>
  ....
</P2Control>
```

If response Command exists, it is sent with CamCtl tag. If it does not, P2Control tag returns without elements. Some Commands bring with attributes in CamCtl tag.

If the Command fails, the following responses are returned.

```
<P2Control>
  <Error>Error type</Error>
  < CamCtl> Command </CamCtl>
</P2Control>
```

CamCtl tag is optional. “Error type” indicates what the trouble is. This string can contain following sentences.

- "Invalid Remote control. Check setup of Device."

This error indicates that Camera system denied accepting the command. The typical reason why this happens is that "Remote Control Mode" is disabled in Camera system's setting

- "Communication Busy"

This error indicates that Camera system couldn't accept the command because previous command is still under processing.

- "Operation Time Out"

This error indicates that Camera system couldn't complete processing the command.

- " Unknown Error "

This error indicates that Camera system couldn't understand specified command. It is indicated in CamCtl tag.

Other tags may be added in future specification, so current implementation should be ignored unknown tags.

6.72.4 Response example

The example of "Send Data" in the case of **Command** =" \$ShtSync:c"

```
<P2Control>
  <Auth>encrypted_password</Auth>
  <CamCtl>$ShtSync:c </CamCtl>
</P2Control>
```

The following responses are returned when succeed.

```
<P2Control>
  < CamCtl >$ShtSync:i2,8000 </CamCtl >
</P2Control>
```

The content of Command tag is same as Send Data. If response value exists, Value tag is appended.

Even the content of Value tag means NG or error, content of Message tag is OK because communication and command parse succeeded.

See Command List for other examples.

7 Communication on 49153/UDP port

49153/UDP port is used for notify the following information one-sidedly from the P2 equipment to external terminal.

- Event generation on P2 equipment side (Section 7.2)
- Notification of REC format of TC and Video (Section 7.3)
- Residual quantity notification for P2 card (Section 7.4)
- Residual quantity notification of battery (Section 7.5)
- Notification of REC format of Audio (Section 7.6)
- Notification of Optical setting (Section 7.7)
- P2 Equipment's Status Notification (Section 7.8)
- Residual quantity notification for micro P2 card (Section 7.9)
- Camera Status Notification (Section 7.10)

Port No. 49153 can be changed as far as both P2 equipment and external terminal correspond.

7.1 Communication outline

To receive above information, external terminal shall send 3 bytes packet , "0xff, 0x01, 0xff" , to 49153/UDP periodically, (recommended interval is every 5 seconds). P2 equipment delivers above information to the port which external terminal used. P2 equipment **stops delivery** if 3 bytes packet does not receive for **15 seconds**.

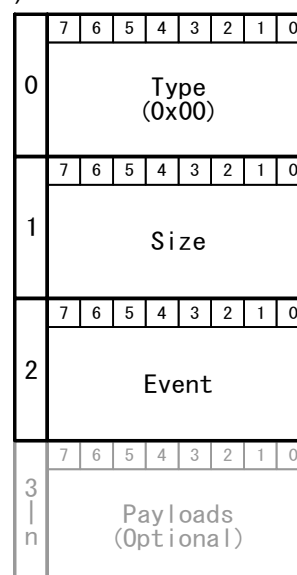
P2 equipment can deliver information up to 5 external terminals, it is ignored additional request more than 5, and no warning message will return.

7.1.1 Type

Type indicates what kind of data will be followed. Below is data category by Type.

Type Value	Type of data
0x00	Event Notification
0x01	Time Code Notification
0x02	Media Residual quantity Notification for P2 Card
0x03	Power supply state Notification
0x04	Audio Information Notification
0x05	Reserved
0x06	Optical Setting Notification (*1)
0x08	P2 Equipment's Status Notification
0x09	Media Residual quantity Notification for micro P2 Card and Total
0x0A	Reserved
0x0B	Equipment's status and information Change Event Notification
0x0C ~ 0xFF	Reserved

(*1)



7.1.2 Size

The data size is shown. [Type] and [Size] data are not included in this count.

7.2 Event Notification

7.2.1 Outline

The event on the P2 equipment side is notified when "0x00" is specified with Type.

7.2.2 Composition

Event

The kind of the event generated on the P2 equipment side is shown(1byte). Some of the events have supplementation data

EventValue	Type of Event
0x00	Recording beginning
0x01	Recording end
0x02	Playback begin
0x03	Playback end
0x04~0x05	Reserved
0x06	Update P2 Contents
0x07	Update Camera setting

Payloads

Following event has Payload which gives additional information.

Event	Payload
0x04 (update by card)	1st byte; Slot No. (8bit binary)
0x05 (update by clip)	1st byte: Slot No. (8bit binary) 2nd byte~7th byte: clip name (ascii)

7.2.3 Remarks

"Time Code notification" is done immediately after the event notification.

"Media remain notification" is done right after the notification of the event "Card Insert/Pullout". Above two events may happen in the same UDP packet

7.3 Time Code Notification

7.3.1 Outline

The Time code of the P2 equipment is notified when 0x01 is specified with Type.

The P2 equipment notifies the receiving terminal of time code periodically (**around 2 seconds**) and at the important event (for instance, beginning and end of recording).

It conforms to the TimeCode notation in DIF decided in the SMPTE 314M standard. Refer to this standard for details. However, external terminal shall not use the bit written in figure "To Be Ignored", and shall ignore "DropFrame" bit at 50Hz format.

7.3.2 Composition

Run (6/7)

It notifies whether the time code is running.

Run (Timecode 6/7)	
1	TC run
0	TC Stop

Cam Status (6/5-6)

The state of the P2 equipment by present is notified.

Cam Status (Timecode 6/5-6)	
00	Stop
01	Recoding
10	Playing
11	Reserved

FrameFreq (6/0-4)

The frequency of the recording format set to the P2 equipment is notified.

FrameFreq (Timecode 6/0-4)			
00000	59.94i	01000	25p (over 50i)
00001	29.97p (over 59.94i)	01001	25p (over 50p)
00010	23.98p (over 59.94i)	01010	25p (Native)
00011	23.98pA (over 59.94i)	01011	59.94p
00100	29.97p (Native)	01100	29.97p (over 59.94p)
00101	24p (Native)	01101	23.98p (over 59.94p)
00110	23.98p (Native)	01110	60p
00111	50i	01111	50p

Lines (7/4-7)

The number of horizontal scanning lines of recording formats set to the P2 equipment is notified.

Lines (Timecode 7/4-7)	
0000	1080
0001	720
0010	576
0011	480
0100	2160

0	7	6	5	4	3	2	1	0
	Type (0x01)							
1	7	6	5	4	3	2	1	0
	Size							
2	7	6	5	4	3	2	1	0
	(to be Ignored)	Drop Frame	Frame Tens	Frame Units				
3	7	6	5	4	3	2	1	0
	(to be Ignored)	Second Tens			Seconds Units			
4	7	6	5	4	3	2	1	0
	(to be Ignored)	Minutes Tens			Minutes Unit			
5	7	6	5	4	3	2	1	0
	(to be Ignored)	Hours Tens			Hours Units			
6	7	6	5	4	3	2	1	0
	Run	Cam Status			Frame Freq			
7	7	6	5	4	3	2	1	0
	Lines				Codec			
8	7	6	5	4	3	2	1	0
	FrameRate (Optional)							
9	7	6	5	4	3	2	1	0
	Codec Extend (Optional)							
A	7	6	5	4	3	2	1	0
	SensorMode (Optional)			H Pixel (Optional)				
B	7	6	5	4	3	2	1	0
	Reserved				SDI_RAW Mode (Optional)			

Codec (7/0-3)

The compressed format of the recording format set to the equipment is notified.

If the value is b1111, Codec extend (9 / 0-7) should be referred to get the compressed format.

Codec (Timecode 7/0-3)	
0000	DV
0001	DVCPRO
0010	DVCPRO50
0011	DVCPROHD
0100	AVCHD
0101	AVC-Intra 50
0110	AVC-Intra 100
0111	AVC-Intra 200
1000	AVC-Long 6
1001	AVC-Long 12
1010	AVC-Long 25
1011	AVC-Long 50
1100	AVC-Intra422
1111	Codec extend

Frame Rate (8/0-7)

The current “real frame rate” of the recording is notified. This is useful when VFR (Variable Frame Rate) is set to the P2 equipment.

This value is stored in 8bit integer format. But you must be aware that “30” is stored when 60i or 60p (constant frame rate) is set to P2 equipment and “25” is stored when 50i or 50p (constant frame rate) is set to P2 equipment.

When this value is 0x00, this “Frame Rate” field is unavailable.

Codec extend (9/0-7)

The compressed format of the recording format set to the equipment is notified.

Codec extend(Timecode 9/0-7)	
0x00-0x1F	Reserved
0x20	MP4 4K 100M
0x21	MP4 UHD 150M
0x22	MP4 UHD 100M
0x23	MP4 FHD ALL-I
0x24	MP4 FHD 100M
0x25	MP4 FHD 50M
0x26	MOV 4K 100M
0x27	MOV UHD 150M
0x28	MOV UHD 100M
0x29	MOV FHD ALL-I
0x2A	MOV FHD 100M
0x2B	MOV FHD 50M
0x2C	MOV FHD 8M
0x2D	AVCHD PS
0x2E	AVCHD PH
0x2F	AVCHD HA
0x30	AVCHD HE
0x31	AVCHD PM
0x32	AVCHD SA
0x33	420LongGOP 150M
0x34	420LongGOP 100M
0x35	420LongGOP 50M

0x36	422LongGOP 150M
0x37	422LongGOP 100M
0x38	422LongGOP 50M
0x39	422Intra 400M
0x3A	422Intra 200M
0x3B	422Intra 100M
0x3C	SDI RAW
0x3D	HEVC LongGOP 200M
0x3E	HEVC LongGOP 150M
0x3F	HEVC LongGOP 100M

H Pixel (A/0-4)

The number of horizontal scanning pixels of recording formats set to the P2 equipment is notified.

H Pixel (Timecode A/0-4)	
00000-00011	Reserved
00100	1280
00101	1440
00110	1920
00111	2048
01000	3840
01001	4096
01010	5760
01011-11111	Reserved

Sensor Mode (A/5-7)

This notifies Image Sensor Mode.

Sensor Mode	(Timecode A/5-7)
000	NOMAL
001	MIX
010	CROP
011-111	Reserved

SDI RAW Mode (A/0-3)

This notifies SDI RAW Mode.

SDI RAW Mode	(Timecode A/0-3)
0000	No Function
0001	OFF
0010	S35 5.7K
0011	CROP 4K
0100	CROP&MIX 2K
0011-0111	Reserved

7.3.3 Notes

The notified time code is for recording use, not playback time code even if P2 equipment is play state.

7.4 Media Residual quantity Notification for P2 Card

7.4.1 Outline

Capacity and the residual quantity of media (P2 card) connected with the P2 equipment now are notified when 0x02 is specified with Type.

The P2 equipment notifies the receiving terminal a present state of media at regular intervals. The notified timing is about "2 seconds" as well as the time code notification.

The capacity of media and the residual quantity are written since the third byte. A slot number to which media are inserted and various information are put on the third byte. Afterwards, [Capacity] and [Remain] are consecutive. Information on the slot is skipped when there are no media.

7.4.2 Composition

Slots (2/0-2)

Number of P2 slots of P2 equipment, up to 7. It enters by the numerical value of the binary.

Slot Offset (2/4-6)

Difference between SlotNo. data and actual slot number on P2 equipment. It enters by the numerical value of the binary.

Rec Inhibit (2/7)

Notify the state whether P2 Cards are writing object. This status is independent from Protect / Active value.

Rec Inhibit (Media 2/7)	
0	P2 Cards are writing object group
1	P2 Cards are NOT writing object group

Protect

Media inserted in the slot specified by Slot No. notify the state of Protect.

Protect (Media)	
0	Write Protect = OFF
1	Write protect = ON

Active

Whether this media becomes next writing object(the orange lighting of LED on typical P2 equipment) or not.

Active(Media)	
0	Not Active
1	Active

0	7	6	5	4	3	2	1	0
	Type (0x02)							
1	7	6	5	4	3	2	1	0
	Size							
2	7	6	5	4	3	2	1	0
	Rec Inhibit	Slot Offset			Reserved	Slots		
3	7	6	5	4	3	2	1	0
	Protect	Active	Error	Reserved	SlotNo.			
	7	6	5	4	3	2	1	0
	Capacity L (Optional)							
	7	6	5	4	3	2	1	0
	Capacity H (Optional)							
	7	6	5	4	3	2	1	0
	Remain L (Optional)							
	7	6	5	4	3	2	1	0
	Remain H (Optional)							

Error

The cause is notified when inserted media are illegal. 0 enters when it is possible to record including write protect mode. When the notified value is not 0, the value of [Capacity] and [Remain] is invalid.

Error (Media)	
00	it is possible to record
01	Not Supported
10	Unformatted
11	Reserved

SlotNo.

The slot number is notified. It enters by the numerical value of the binary.

Capacity

The total time that can be recorded by the given recording format. The unit is "Second" The numerical value enters by the binary in Little Endian over two bytes.

Remain

The remaining time that can be recorded to present media by the given recording format. The unit is "Second". The numerical value enters by the binary in Little Endian over two bytes.

7.5 Power Residual quantity Notification

7.5.1 Outline

The battery residual quantity is notified when 0x03 is specified with Type.

7.5.2 Composition

Battery Remain

Present amount of the battery remainder is notified by the fraction of [Battery Remain] / [Battery Max].

If the [Battery Max] is omitted, the denominator is 7. The [Battery Remain] value is from 0 to [Battery Max].

	7	6	5	4	3	2	1	0
0	Type (0x03)							
1	7	6	5	4	3	2	1	0
	Size (0x01 or 0x02)							
2	7	6	5	4	3	2	1	0
	Reserved	Battery Remain						
3	7	6	5	4	3	2	1	0
	Reserved	Battery Max						

7.6 Audio Information Notification

7.6.1 Outline

The data notifies format information on audio set to the P2 equipment now when 0x04 is specified with Type.

7.6.2 Composition

Sampling Rate (2/4-7)

The sampling frequency of audio set now is notified.

Sampling Rate (Audio 2/4-7)	
0000	48kHz
0001	44.1kHz

Bits per Sample (2/0-3)

The number of bits a sample of audio set now is notified.

Bits per Sample (Audio 2/0-3)	
0000	16bits
0001	24bits

Channels (3/0-5)

Number of channels of audio set now. It enters by the numerical value of the binary.

	7	6	5	4	3	2	1	0
0	Type (0x04)							
1	7	6	5	4	3	2	1	0
	Size (0x02)							
2	7	6	5	4	3	2	1	0
	Sampling Rate				Bits per Sample			
3	7	6	5	4	3	2	1	0
	Reserved	Channels						

7.7 Optical Setting Information Notification

7.7.1 Outline

When Type=0x06 is specified, it is notified camera lens related information.

P2 equipment notify lens related information every **0.5 Seconds**. Structure

0	7	6	5	4	3	2	1	0	Type (0x06)										
1	7	6	5	4	3	2	1	0	Size										
2 4	7	6	5	4	3	2	1	0	Reserved										
5	7	6	5	4	3	2	1	0	Focus (ft - High)										
6	7	6	5	4	3	2	1	0	Focus (ft - Low)										
7	7	6	5	4	3	2	1	0	Focus(in)										
8	7	6	5	4	3	2	1	0	Iris (High)										
9	7	6	5	4	3	2	1	0	Iris (Low)										
10	7	6	5	4	3	2	1	0	Focus (exp)					Focus (Sig - High)					
11	7	6	5	4	3	2	1	0	Focus (Significand - Low)										

12	7	6	5	4	3	2	1	0	Zoom (exp)					Zoom (Sig - High)					
13	7	6	5	4	3	2	1	0	Zoom (Significand - Low)										
14 43	7	6	5	4	3	2	1	0	Lens Model Name										
44	7	6	5	4	3	2	1	0	Master Gain (High)										
45	7	6	5	4	3	2	1	0	Master Gain (Low)										
46	7	6	5	4	3	2	1	0	Shutter Speed (Integer Part - High)										
47	7	6	5	4	3	2	1	0	Shutter Speed (Integer Part - Low)										

48	7	6	5	4	3	2	1	0	Reserved					Shutter Mode					
49	7	6	5	4	3	2	1	0	Shutter Speed (decimal)										
50	7	6	5	4	3	2	1	0	Gamma Mode										
51	7	6	5	4	3	2	1	0	Reserved										
52	7	6	5	4	3	2	1	0	ATW/MB		Under/Over		Color Temp (High)						
53	7	6	5	4	3	2	1	0	Color Temperature (Low)										
54	7	6	5	4	3	2	1	0	ND Filter										
55	7	6	5	4	3	2	1	0	CC Filter										

56	7	6	5	4	3	2	1	0	Iris info		Focus info		Zoom info		Model info							
57	7	6	5	4	3	2	1	0	AGC		Gain Mode		iA Zoom Info		RB gain info		IRIS Type		ZoomSM		ND Disp type	
58	7	6	5	4	3	2	1	0	VFR Mode					VFR Frame Rate (High)								
59	7	6	5	4	3	2	1	0	VFR Frame Rate (Low)													
60	7	6	5	4	3	2	1	0	iA Zoom (exp)					iA Zoom (Sig - High)								
61	7	6	5	4	3	2	1	0	iA Zoom (Significand - Low)													
62	7	6	5	4	3	2	1	0	ISO Select			AMB Col. Temp. EI Gain Mode		Col. Temp. Mag.		AMB Channel						
63	7	6	5	4	3	2	1	0	C.Temp GMg (High)													
64	7	6	5	4	3	2	1	0	C.Temp GMg (Low)													

Focus (5-7)

It indicates focal length. Foot/Feet unit part is 5~6th bytes at BigEndian, Inch unit part is byte 7th. Focus Info bits (byte 56) indicates it is valid or not.

Iris (8-9)

Depending on setting of IRIS TYPE (57/2), It indicates F number or T number. Value is integer and 10 times of actual F number at BigEndian form. For example, if 8~9th bytes are 0x00FF, F =25.5. Iris Info bits (byte 56) indicate it is valid or not. If this value is 0, it means Iris Open, and 0xFFFF means Iris Close.

Focus (10-11)

It indicated focal length. Upper 4bits at byte 10th is exponential part, rest of 4bits are significant. Number of decimals is two, and unit is "m". Focus Info bits (byte 56) indicates it is valid or not.

Zoom (12-13)

It indicates Zoom value. Upper 4bits at byte 12th is exponential part, rest of 4bits are significant. Number of decimals is two, and unit is "m". Zoom Info bits (byte 56) indicates it is valid or not.

Lens Model (14-43)

It indicates Lens name at ASCII code.

Master Gain (44-45)

It indicates Gain value. If Gain Mode(byte 57/6) is dB, Value is signed integer at BigEndian. If Gain Mode is ISO, this value is unsigned integer, and 1/10 of ISO value(Ex. ISO100 : 10). If value is 0xFFFF, it means more than ISO655340.

Shutter Speed [Integer Part] (46-47)

Shutter Speed [Decimal Part] (49)

It indicates shutter speed. Integer part is 46~47th bytes at BigEndian, decimal part is byte 49th. Shutter Mode shows how to calculate Shutter Speed.

Shutter Mode (48)

It indicates calculation method of shutter speed. Following table shows how to calculate based on mode.

Shutter Mode (Optical 48/0-8)	
0	Shutter Off : unable to get shutter speed
1	Fixed mode (common fraction) : integer part is denominator, 1 is numerator. It does not use decimal value of Shutter Speed. Unit is second.
2	Fixed mode (decimal figure) : Integer part and decimal part is jointed. Number of decimals is one. Unit is deg.
3 and 6	SYNCRO mode (common fraction) ; Denominator is fraction value by Integer part and decimal part, numerator is 1. However, if integer part is larger than 1000, fraction is not used. Unit is second.
4	Half Shutter mode. Unable to get shutter speed.
5	SYNCRO mode (decimal figure) : fraction value by jointed integer part and decimal part. Number of decimals is 1. Unit is deg.
6-7	Reserved
8	Numerator is 1, denominator value is jointed integer part and decimal part. Unit is SEC

Gamma (50)

It indicates Gamma value.

Gamma (Optical 50/0-7)							
0	HD	4	FILMLIKE3	8	CINE-LIKE D	12	V255570L1
1	SD	5	FILM-REC	9	CINE-LIKE V	13	V504580L1
2	FILMLIKE1	6	DFLT	10	STILL	14	VIDEO
3	FILMLIKE2	7	VIDEO-REC	11	HLG		

ATW/WB (52/6-7)

It indicates if Auto Tracing White Balance is Valid or not. If Auto Tracing White Balance is invalid, the color temperature (byte 52 and 53) is valid.

ATW/WB (Optical 52/6-7)	
0	ATW is invalid
1	ATW is valid
2	ATW is valid & LOCK
3	Reserved

Color Temperature (52/0-3, 53)

It indicates color temperature value.

If "Col.Temp.Mag" (62/1) is 1, the value is 1/10 of actual data. (Ex. Color Temperature = 3200, value = 320)

If "Col.Temp.Mag" (62/1) is 0, the value is 1/100 of actual data. (Ex. Color Temperature = 3200, value = 32)

If the color temperature value is invalid, 0xFFFF is set.

Under/Over (52/4-5)

It indicates color temperature. The value of 1/100 of the actual value is stored in lower 4 bits of byte 52 and byte 53 at BigEndian. If Under/Over (byte52, bit 4-5) is "01", actual color temperature is below Color Temperature, if Under/Over is "2", actual color temperature is over Color Temperature, if Under/Over is "0", Color Temperature is correct value.

ND Filter (54)

It indicates ND filter. Unsigned integer value. If value is 0, it indicates CLEAR, if value is 0xFF, it is failed. If ND Disp Type (57/0) is 0, the value indicates denominator, numerator is 1. If ND Disp Type (57/0) is 1, the value indicates 100 times of actual value (Ex.ND=1.8 : value=180).

CC Filter (55)

It indicates Color Correction Filter. 100 times of Byte 55 is actual value. Unit is "K". If value is 0xFF, it is failed.

Iris Info (56/6-7)

It indicates Iris status

Iris Info (Optical 56/6-7)	
0	Normal : Byte 8~9 is valid value.
1	It does not get F value from Lens yet.
2	CLOSE
3	It does not connect Lens.

Focus Info (56/4-5)

It indicates Focus status.

Focus Info (Optical 56/4-5)	
0	Normal : Byte 5~7 and 10~11 is valid value.
1	It does not get Focus information from lens yet.
2	Focus position is infinite. "∞"
3	It does not connect Lens.

Zoom Info (56/2-3)

It indicates Zoom status.

Zoom Info (Optical 56/2-3)	
0	Normal : Byte 12~13 is valid value.
1	It does not get zoom information from lens yet.
2	Reserved
3	It does not connect Lens.

Model Info (56/0-1)

It indicates Lens model number

Model Info (Optical 56/0-1)	
0	Normal : Byte 14~43 is valid value.
1	It does not get Model information from lens yet.
2	Reserved
3	It does not connect lens.

AGC (57/7)

It indicates if Auto Gain Control is ON or OFF.

AGC (Optical 57/7)	
0	AGC is OFF
1	AGC is ON

Gain Mode (57/6)

It indicates if Gain Mode is dB or ISO. The unit of Master Gain (44-45) is changed by this value.

Gain Mode (Optical 57/6)	
0	Gain is dB
1	Gain is ISO

iAZoom Info (57/5-4)

It indicates iAZoom status.

iAZoom Info (Optical 57/5-4)	
0	Normal : Byte 60~61 is valid value.
1	It does not get zoom information from lens yet.
2	Reserved
3	It does not connect Lens.

RB Gain Info (57/3)

It indicates if RB Gain control is enable or disable.

RB Gain Info (Optical 57/3)	
0	RG Gain is enable
1	RG Gain is disable

IRIS TYPE (57/2)

It indicates IRIS TYPE.

IRIS TYPE (Optical 57/2)	
0	F number
1	T number

iZoomSW status (57/1)

It indicates iZoomSW status.

iZoomSW (Optical 57/1)	
0	OFF
1	ON

ND Disp Type (57/0)

It indicates the type of ND Filter data (54) format.

ND Disp Type (Optical 57/0)	
0	ND Filter (54) is Fraction format
1	ND Filter (54) is Decimal format

VFR Mode (58/4-7)

It indicates Lens model number

VFR Mode (Optical 58/4-7)	
0	VFR is OFF
1	VFR is ON
2 - 14	Reserved
15	VFR is invalid.

Frame Rate(58-59)

It indicates Frame Rate. This value is valid even if VFR Mode is OFF.

iAZoom(60-61)

It indicates iAZoom value. Upper 4bits at byte 60th is exponential part, rest of 4bits are significant. Number of decimals are two. iAZoom Info bits (byte 57) indicates it is valid or not.

EI ISO Select (62/4-7)

This value is valid when Gain Mode(57/6) is ISO.

EI ISO Select (Optical 62/4-7)	
0	NATIVE ONLY
1	800BASE
2	2500BASE
5	5000BASE (VARICAM only)

EI GAIN MODE (62/3)

This value is valid when Gain Mode(57/6) is ISO.

EI GAIN MODE (Optical 62/3)	
0	NORMAL
1	HIGH

AWB Color Temp. Flag (62/2)

It indicates whether the value of the white balance (52/0-3, 53) is set by AWB.

AWB Color Temp. FLAG (Optical 62/2)	
0	Manual
1	AWB

Color Temp. Magnification (62/1)

It indicates the magnification of Color Temperature value (52/0-3, 53).

Color Temp. Magnification (Optical 62/1)	
0	1/00 of real setting value
1	1/10 of real setting value

C.Temp GMg (63-64)

This value indicates adjusted value in balance between green and magenta. 10 times of real setting value is notified. In case of 0x8000 it indicates invalid function.

AWB Channel Flag (62/0)

It indicates whether AWB channel is A or B .

Valid only when AWB Color Temp.Flag bit is AWB.

AWB Color Temp. FLAG (Optical 62/2)	
0	AWB A CH
1	AWB B CH

7.8 P2 Equipment's Status Notification

7.8.1 Outline

When Type=0x08 is specified, it is notified P2 equipment's status information.

P2 equipment notify its status information every **2 Seconds**.

7.8.2 Composition

Aspect (2/7)

It indicates P2 equipment's Streaming aspect

Aspect (Status Notification 2/7)	
0	Video aspect ratio is 4:3.
1	Video aspect ratio is 16:9.

Proxy-B Err (2/6)

It indicates P2 equipment's Proxy Board Error Status. This is only for models with Optional Proxy Board.

Proxy-B Err (Status Notification 2/6)	
0	Proxy Board Error does not occur, or no Proxy Board
1	Proxy Board Error occurs

Proxy-B Busy (2/5)

It indicates P2 equipment's Proxy Board Busy Status. This is only for models with Optional Proxy Board.

Proxy-B Busy (Status Notification 2/5)	
0	Proxy Board is not Busy, or no Proxy Board
1	Proxy Board is Busy

Proxy Rec Media (2/3-4)

It indicates P2 equipment's Proxy Recording Media.

Proxy Rec Media (Status Notification 2/3-4)	
0	No Recording Media(Proxy Rec is OFF)
1	Recording Media is (micro) P2 cards
2	Recording Media is (micro) P2 cards and SD Card
3	No proxy recording or sub recording

STRM Invalid (2/2)

It indicates P2 equipment's Streaming Setting Status

STRM Invalid (Status Notification 2/2)	
0	Streaming is valid
1	Streaming is invalid

Proxy Rec Mode (3/0-7)

It indicates P2 equipment's Proxy Recording Mode.

Proxy Rec Mode (Status Notification 3/0-7)	
0	STD 2CH MP4
1	HQ 4CH MP4
2	HQ 4CH MOV
3	LOW 2CH MOV
4	FR 4CH MP4
5	SHQ 2CH MOV

0	7	6	5	4	3	2	1	0
	Type (0x08)							
1	7	6	5	4	3	2	1	0
	Size (0x05)							
2	7	6	5	4	3	2	1	0
	Aspect	Proxy-B Err	Proxy-B Busy	Proxy Rec Media	STRM Invalid	Reserved		
3	7	6	5	4	3	2	1	0
	Proxy Rec Mode							
4	7	6	5	4	3	2	1	0
	Reserved	Power ON	Proxy-B	Direction	Streaming Mode			
5	7	6	5	4	3	2	1	0
	Reserved	Low Battery	Reserved	Turn P-OFF	Reserved			Mode
6	7	6	5	4	3	2	1	0
	Streaming Format							
7	7	6	5	4	3	2	1	0
	Cam Index							
8	7	6	5	4	3	2	1	0
	Reel Count (Low)							
9	7	6	5	4	3	2	1	0
	Reel Count (High)							
10	7	6	5	4	3	2	1	0
	Clip Number (Low)							
11	7	6	5	4	3	2	1	0
	Clip Number (High)							

6	HQ 2CH MOV
7	AVC G6 2CH MOV
8	2048x1080 12M
9	1920x1080 12M
10	2048x1080 6M
11	1920x1080 6M
12 – 255	Reserved

Proxy-B Power ON (4/4-5)

It indicates P2 equipment's Proxy Recording Media. This is only for models with Optional Proxy Board.

Proxy-B Power ON (Status Notification 4/4-5)	
0	Power OFF
1	During Start up
2	Reserved
3	Power ON

Direction (4/3)

It indicates the Direction of Streaming start trigger

Direction (Status Notification 4/3)	
0	Streaming start trigger is External terminal
1	Streaming start trigger is P2 equipment.

Streaming Mode (4/0-2)

It indicates P2 equipment's Streaming Mode.

Streaming Mode (Status Notification 4/0-2)	
0	Reserved
1	RTP Streaming
2 - 3	Reserved
4	HTTP Streaming
5 - 7	Reserved

Low Battery (5/6)

It indicates P2 equipment's Low Battery status

Low Battery (Status Notification 5/6)	
0	P2 Equipment is not Low Battery state
1	P2 Equipment is Low Battery state

Turn P-OFF (5/4)

It indicates P2 equipment's system status

Turn (Status Notification 5/4)	
0	P2 Equipment is not Error state.
1	P2 Equipment is System Error state, and needs Turn Power OFF.

Mode (5/0)

It indicates P2 equipment's Mode Setting

Mode (Status Notification 5/0)	
0	P2 Equipment is in PLAYLIST MODE
1	P2 Equipment is in NORMAL MODE (not in PLYALIST MODE)

Streaming Format (6/0-7)

It indicates P2 equipment's Streaming Format.

Streaming Format (Status Notification 6/0-7)	
0	Reserved
1	LOW
2	HQ
3	AVC-G6
4	SHQ(QoS)
5	AVC-G6(QoS)
6 – 255	Reserved

Cam Index (7/0-7)

Camera Index number of recording. Set ASCII char code from 'A' to 'Z'. This parameter is disable if 0xFF is set.

Reel Count (8-9/0-7)

Reel Count of recording. Set integer value from 0 to 999. This parameter is disable if 0xFFFF is set.

Clip Number (10-11/0-7)

Clip Number of recording. Set integer value from 0 to 999. This parameter is disable if 0xFFFF is set.

7.9 Media Residual quantity Notification for Micro P2 Card and Total

7.9.1 Outline

Capacity and the residual quantity of media (micro P2 card) connected with the P2 equipment now and of Total are notified when 0x09 is specified with Type. Other specification than below is same as section 7.4.

The Total capacity and the Total residual quantity are written as slot 0(byte 3 – 7). This data block includes both P2 and microP2 Cards in P2 equipment, and exists even if no media is inserted. The unit is "Second". The numerical value enters by the binary in Little Endian over two bytes.

7.9.2 Composition

See section 7.4.2 for Common data (but for micro P2). Different data are following.

Slots (2/0-2)

Number of micro P2 slots of P2 equipment.up to 7. It enters by the numerical value of the binary.

Rec Inhibit (2/7)

Notify the state whether micro P2 Cards are writing object. This state is independent from Protect / Active value.

Rec Inhibit (Media)	
0	micro P2 Cards are writing object group
1	micro P2 Cards are NOT writing object group

ValType (3/4-5)

This data is only for slot 0.

Notify the Type of Total Capacity and Remain

ValType (Media 3/4-5)	
00	Total Capacity and Remain
01 - 11	Reserved

0	7	6	5	4	3	2	1	0
	Type (0x09)							
1	7	6	5	4	3	2	1	0
	Size							
2	7	6	5	4	3	2	1	0
	Rec Inhibit	Slot Offset			Reserved	Slots		
3	7	6	5	4	3	2	1	0
	Reserved	Val Type			Reserved	0x000		
4	7	6	5	4	3	2	1	0
	Total Capacity L							
5	7	6	5	4	3	2	1	0
	Total Capacity H							
6	7	6	5	4	3	2	1	0
	Total Remain L							
7	7	6	5	4	3	2	1	0
	Total Remain H							
8 n	7	6	5	4	3	2	1	0
	Protect	Active	Error		Reserved	SlotNo.		
	7	6	5	4	3	2	1	0
	Capacity L (Optional)							
	7	6	5	4	3	2	1	0
	Capacity H (Optional)							
	7	6	5	4	3	2	1	0
	Remain L (Optional)							
	7	6	5	4	3	2	1	0
	Remain H (Optional)							

7.10 Camera Status Notification

7.10.1 Outline

When Type=0x0A is specified, it is notified camera status notification.

This packet's information is equal to CamCtl Query Commands, but this is possible to get them altogether without query command.

Most P2 equipments notify this status every **0.5 Seconds**, after "Connect" CamCtl Command succeeded.

See CamCtl Command List for each data.

7.10.2 Structure

0	7 6 5 4 3 2 1 0	Type (0x0A)
1	7 6 5 4 3 2 1 0	Size (0x21)
2	7 6 5 4 3 2 1 0	ArcSw AirsSw BarSw Char Dctd DtlSw IrsCISw KneeCont
3	7 6 5 4 3 2 1 0	Menu Menu Menu Menu Menu Menu Menu Menu
4	7 6 5 4 3 2 1 0	Thumbnail Reserved Green Tally Red Tally
5	7 6 5 4 3 2 1 0	Reserved
6	7 6 5 4 3 2 1 0	Abb
7	7 6 5 4 3 2 1 0	Awb
8	7 6 5 4 3 2 1 0	CcFil
9	7 6 5 4 3 2 1 0	NdFil
A	7 6 5 4 3 2 1 0	Extd
B	7 6 5 4 3 2 1 0	WBaSel
C	7 6 5 4 3 2 1 0	RGain (High)
D	7 6 5 4 3 2 1 0	RGain (Low)
E	7 6 5 4 3 2 1 0	BGain (High)
F	7 6 5 4 3 2 1 0	BGain (Low)
10	7 6 5 4 3 2 1 0	MPed (High)
11	7 6 5 4 3 2 1 0	MPed (Low)
12	7 6 5 4 3 2 1 0	RPed (High)
13	7 6 5 4 3 2 1 0	RPed (Low)
14	7 6 5 4 3 2 1 0	GPed (High)
15	7 6 5 4 3 2 1 0	GPed (Low)
16	7 6 5 4 3 2 1 0	BPed (High)
17	7 6 5 4 3 2 1 0	BPed (Low)
18	7 6 5 4 3 2 1 0	MDtI (High)
19	7 6 5 4 3 2 1 0	MDtI (Low)
1A	7 6 5 4 3 2 1 0	Irs (High)
1B	7 6 5 4 3 2 1 0	Irs (Low)
1C	7 6 5 4 3 2 1 0	AirsLv (High)
1D	7 6 5 4 3 2 1 0	AirsLv (Low)
1E	7 6 5 4 3 2 1 0	Alarm (High)
1F	7 6 5 4 3 2 1 0	Alarm (Low)
20	7 6 5 4 3 2 1 0	Color Setting SUB
21	7 6 5 4 3 2 1 0	Color Setting OUTPUT 1
22	7 6 5 4 3 2 1 0	Color Setting OUTPUT 3

Sw Bits (2-3)

These Bits indicate ON/OFF state of CamCtl Query command's response.

Sw Bits (2-5)	
0	OFF(sOff)
1	ON(sOn)

KneeSel (3/0-1)

It indicates KneeSel Status..

KneeSel (3/0-1)	
0	OFF
1	AUTO
2	MANUAL
3	Reserved

Abb (6)

It indicates ABB action status.

Abb (6)	
0	ABB inactive(sNop)
1	ABB running(sActive)
2	ABB OK(sOk)
3	ABB NG(sNg)
4	ABB Break(sBreak)

Awb (7)

It indicates AWB action status.

Awb (7)	
0	AWB inactive(sNop)
1	AWB running(sActive)
2	AWB OK(sOk)
3	AWB NG(sNg)
4	AWB Break(sBreak)
5	AWB running on ATW Mode(sAtw-mode)
6	AWB running on Preset setting(sPreset)
7	AWB running on Color Bar(sColor-bar)
8	AWB running with CC filter is NG(sFilter-ng)
9	AWB running with S.Gain ON(sUnable)

CcFil (8)

It indicates ABB action status.

CcFil (8)	
0	CC Position 1(s0)
1	CC Position 2(s1)
2	CC Position 3(s2)
3	CC Position 4(s3)
4	CC Position 5(s4)
15	CC Position NG(s15)
0x80	CC is unused(s128)

NdFil (9)

It indicates ABB action status.

NdFil (9)	
0	ND Position 1(s0)
1	ND Position 2(s1)
2	ND Position 3(s2)
3	ND Position 4(s3)

4	ND Position 5(s4)
15	ND Position NG(s15)
0x80	ND is unused(s128)

Extd (A)

It indicates Extender status.

Extd (A)	
0	No Extender(s1.0)
1	x0.8 Extender (s0.8)
2	X2.0 Extender (s2.0)

WBalSel (B)

It indicates White Balance setting.

WBalSel (B)	
0	AWB PRE(sPreset)
1	AWB A CH (sA)
2	AWB B CH (sB)

M Ped (10-11)

M Ped (10-11)	
0x8000	Invalid(!)
other	Master Pedestal value(s-200 to s200)

Irs (1A-1B)

This value is Iris Control data(0 – 65535), and is not F nor T No. value.

Alarm (1E-1F)

It indicates Alarm status.

Alarm (1E-1F)	
0	WARNING LED OFF(sOff)
1	WARNING LED ON(sOn)
2	WARNING LED SLOW Blink(sOn1)
3	WARNING LED FAST Blink(sOn4)
8	Internal Communication Error(sOn8)

Color Setting MAIN (20/0-3)

Color recoded in main recorder or in whole camera system is set

Color Setting SUB (20/4-7)

Color recoded in sub recorder is set.

Color Setting OUTPUT 1 (21/0-3)

Image from OUTPUT1 is set.

Color Setting OUTPUT 2 (21/4-7)

Image from OUTPUT2 is set.

Color Setting OUTPUT 3 (22/4-7)

Image from OUTPUT3 is set.

Color Setting MAIN/SUB/OUTPUT 1/OUTPUT 2/OUTPUT 3 (20 - 22)	
0	No Function
1	V-Log
2	V-709
3	SCENE1
4	SCENE2
5	SCENE3
6	SCENE4
7	SCENE5
8	Reserved
9	HLG
10	SDR
11-15	Reserved

8 Communication on 49154/UDP port

49154/UDP port is used for notify the following information one-sidedly from the P2 equipment to an external terminal.

- Varicam Status Notification(Section 8.2)

Port No. 49154 can be changed as far as both P2 equipment and external terminal correspond.

8.1 Communication outline

To receive above information, external terminal shall send 3 bytes packet , "0xff, 0x01, 0xff" , to 49154/UDP periodically, (recommended interval is every 5 seconds). P2 equipment delivers above information to the port which external terminal used. P2 equipment **stops delivery** if 3 bytes packet does not receive for **15 seconds**.

P2 equipment can deliver information up to 5 external terminals, it is ignored additional request more than 5, and no warning message will return.

8.1.1 Type

Type indicates what kind of data will be followed. Below is data category by Type.

Type Value	Type of data
0x01	Varicam Status Notification
0x02	Time Code Notification
0x03	RecFile Notification

8.1.2 Size

The data size is shown. [Type] and [SizeBytes] and [Size] data are not included in this count.

8.2 Varicam Status Notification

8.2.1 Outline

Along with TYPE = 0x01, data not derived from the Varicam menu setting and some saved menu setting values are notified. Notification timing is done every 500 seconds ~ 1 second. (There are cases where immediate notice is given at the time of status change) Even if you do not grab control by the TCP command DeckConfig: Set Remote Mode, you can receive this notification by sending dummy packets to the camera according to the UDP specification. Since Varicam 35 / HS and VaricamLT have different device specifications, there are some that share information at the same address, such as SUB slot → PROXY slot, and some are divided into different addresses like battery information. The packet size changes according to the number of saved setting values in menu. Indication specification is typical example of current models, it may change by version up or at new model.

8.2.2 Composition

Addr	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0000h	Type(0x01)								SizeBytes							
0002h	Size															
0004h	Group															
0006h	Model								ProtocolVersion							
0008h	MenuData Start Addr[0]															
000Ah	MenuData Start Addr[1]															
000Ch	Remote	-	-	-	-	-	-	-	AddSupport	-	-	-	-	-	-	-
000Eh	Main All Status								SUB / Proxy All Status							
0010h	Main All Remain															
0012h	SUB/Proxy All Remain															
0014h	Main Rec Status								Sub / Proxy Rec Status							
0016h	CLIP REEL Type								Cam Index							
0018h	Reel Count															
001Ah	Clip Number															
001Ch	Warning/Alert Status								Warning Type							
001Eh	MultiBatteryIconType								OnBoardBatteryIconType							
0020h	DcBatteryIconType								MultiBatteryLevel							
0022h	MultiBatteryInfo															
0024h	OnBoardBatteryInfo															
0026h	DcBatteryInfo															
0028h	Fps															
002Ah	Shutter DEG															
002Ch	Shutter SEC															
002Eh																
0030h	EI ISO															
0032h	EI dB															
0034h	WHITE															
0038h	REAR1 Sel	REAR2 Sel	-	-	-	-	-	-	TC Slave	-	-	-	-	-	-	-
003Ah	Sequence No.								MenuSize							
003Ch	MenuID[0]															
0040h	MenuDataSize[0]								MenuData[0]							
0042h	MenuID[1]															
0044h	MenuDataSize[1]															
0046h	MenuData[1]															
0048h	MenuData[1]															
004Ah	MenuID[2]															
...	...															
...																

※ Numbers larger than 2 Bytes are stored in BigEndian

SizeBytes

Number of bytes of Size item, Type = 0x01 is fixed to 2.

Size

It changes according to the data size (Byte) after Group and the value of MenuSize.

The values are the same for cameras of the same model and same version.

Group

Model type Group is indicated. Varicam 35 / HS and VaricamLT fixed at 0x0001

Model

Recorder type by value is represented. The client side judges whether it is a compatible model or not by looking at the model Group, this value, and the next protocol Version.

Model	Type of Model
0x01	Varicam35
0x02	Varicam35 + Codex
0x03	VaricamHS
0x04	VaricamLT

ProtocolVersion

Camera Protocol Version (1 to 255)

MenuData Start Addr

Start offset of menu list information

* Start offset of Sequence No. when Group (0x0004h) is regarded as start address (0x0000h)

Remote (0x0008/7)

DeckConfig: Status of camera setting change mode by Set Remote Mode

Remote	
0	Setting changed mode is not available.
1	Setting changed mode is available.

AddSupport (0x0008/7)

DeckConfig: If setting table operation by Add Menu and Get Next MenuData, Delete Menu is supported or not?

AddSupport	
0	Setting table operation is not supported.
1	Setting table operation is supported.

Raw240p (0x0008/6)

If SDI RAW setting support 2K / 10 bit and HD / 10 bit is supported or not? Varicam 35 / HS is fixed to 0

Raw240p	
0	SDI RAW 2K/10bit, HD/10bit is not supported
1	SDI RAW 2K/10bit, HD/10bit is supported

Main All Status

MAIN slot information (linked to the remaining amount display area of the MAIN slot information on the HOME screen)

TypeValue	Description	indication
0x00	No card	—
0x01	Main all remain value	0~999
0x02	Media full	END
0x03	Write protected	WP
0x04	Error	ERR
0x05	VaricamLT is UNLK→OPEN	UNLK
0x80	Error with higher priority state. Added by OR except with warning	(Font color changes to red)
0x40	Warning with higher priority state. Added by OR except with error	(Adding “!” in the beginning.)

Sub/Proxy All Status

Slot information of SUB / PROXY (linked to the remaining amount display area of SUB / Proxy slot information on HOME screen)

TypeValue	Description	indication
0x00	No card	—
0x01	Sub / Proxy All Remain value	0~999
0x02	Media full	END
0x03	Write protected	WP
0x04	Error	ERR
0x05	VaricamLT is UNLK → OPEN	UNLK
0x06	Sub/Proxy slot is disabled	OFF
0x80	Error with higher priority state. Added by OR except with warning	(Font color changes to red)
0x40	Warning with higher priority state. Added by OR except with error	(Adding “!” in the beginning.)

Main All Remain

MAIN Total slot remaining in minutes

Integer value from 0 to 999, 0 xffff means invalid

Sub/Proxy All Remain

SUB / Proxy slot remaining amount in minutes

Integer value from 0 to 999, 0 xffff means invalid

Main Rec Status

REC status of MAIN (linked to MAIN slot information left area of HOME screen)

TypeValue	Description
0x00	Normal stop
0x01	Recording in progress
0x02	Interval recording in progress
0x03	Interval recording pause
0x04	Interval recording stop
0x05	Pre-recording stop
0x06	Pre-recording in progress
0x80	No audio recording(added by OR with other value)
0x40	VFR is valid (added by OR with other value)

0x20	SDI REC is valid(added by OR with other value) Linked with information in the lower right area of the HOME screen. *for VaricamLT only
------	---

Sub/Proxy Rec Status

REC status of SUB / Proxy (linked to SUB / Proxy slot information left area of HOME screen)

TypeValue	Description
0x00	Normal stop
0x01	Recording in progress
0x02	Interval recording in progress
0x03	Interval recording pause
0x04	Interval recording stop
0x05	Pre-recording stop
0x06	Pre-recording in progress
0x80	No audio recording(added by OR with other value)
0x40	VFR is valid (added by OR with other value)

CLIP REEL Type

CLIP REEL indication type (CLIP REEL indication mode of HOME screen)

TypeValue	Description
0x00	Not supported
0x01	CLIP / REEL fixed
0x02	CLIP / REEL by Meta attribution
0x03	CLIP / REEL by File name

CamIndex

CAM INDEX for recording (CAM INDEX value of CLIP REEL display of HOME screen)

ASCII character code of A to Z

NULL (0x00) when CLIP REEL Type = 0x00

Reel Count

REEL COUNT for recording (REEL COUNT value of CLIP REEL display on HOME screen)

Integer value from 0 to 999 (It may be different from NEXT REEL COUNT of the menu ID)

When CLIP REEL Type = 0x00, it is 0

Clip Number

CLIP NUMBER for recording (CLIP NUMBER value of CLIP REEL display of HOME screen)

An integer value from 0 to 999

When CLIP REEL Type = 0x00, it is 0

Warning/Alert Status

Warning information (left part of time code display at HOME screen)

TypeValue	Description	Indication
0x00	No warning/alert for indication	
0x01	Warning information provided	(Time code display part is overwritten by warning string)
0x02	Alert information provided	(Time code display part is kept)

Warning Type

Warning information character string (overwrites the time code display part of the HOME screen with the red color font)

TypeValue	Indication
0x00	(No indication)
0x01	SYSTEM ERROR!
0x02	TURN POWER OFF!
0x03	REC WARNING!
0x04	TEMPORARY PAUSE!
0x05	CARD ERROR!
0x06	HIGH TEMPERATURE!

MultiBatteryIcon Type

Battery icon type (display at lower part of battery area of HOME screen) * Varicam 35 / HS only

TypeValue	Indication	Note
0x00	ONLY RECORDER (Remaining level or voltage value of MultiBatteryInfo)	Always 0x00 for non-supported model
0x01	RECORDER(2 pieces)	
0x02	CAMERA(2 pieces)	
0x03	CODEX(2 pieces)	
0x04	RECORDER(3 pieces)	
0x05	CODEX(3 pieces)	
0x06	CAMERA(3 pieces)	

OnBoardBatteryIcon Type

OnBoard battery icon type (upper left display of HOME screen battery area) * VaricamLT only

TypeValue	Description	Note
0x00	No OnBoard battery connection	Always 0x00 for non-supported model
0x01	with OnBoard battery connection	

DCBatteryIcon Type

DC battery icon type (for lower left of HOME screen Battery Area) * VaricamLT only

TypeValue	Description	Note
0x00	No DC battery supply	Always 0x00 for non-supported model
0x01	DC power supply	
0x02	battery	

MultiBatteryLevel

Battery level (upper line of HOME screen battery area) * for Varicam 35 / HS only

TypeValue	Description	Note
0	No indication (UNDER CUT)	Always 0x00 for non-supported model
40	END	
50	NEAR END	
60	BATTERY LEVEL1	
70	BATTERY LEVEL2	
80	BATTERY LEVEL3	
90	BATTERY LIEVEL4	
120	DC IN	

MultiBatteryInfo

Battery level / voltage value (lower line of HOME screen battery area) * for Varicam 35 / HS only

TypeValue	Description	Note
0x0000	No indication	Always 0x0000 for non-supported model
0x2***	EMPTY	Ignore the lower 12 Bit
0x4***	MAX	Ignore the lower 12 Bit
0x8***	Battery level value	Lower12 bits of BCD value (Ex. 0x8087→87%)
0x0***	Voltage value	Lower 12 bits of the BCD value (Ex. 0x0123 → 12.3 V)

OnBoardBatteryInfo

OnBoard Battery Level / Voltage Value (for upper right of HOME Screen Battery Area) * for VaricamLT Only

TypeValue	Description	Note
0x0000	No indication	Always 0x0000 for non-supported model
0x1***	LOW BATTERY	Ignore the lower 12 Bit
0x2***	EMPTY	Ignore the lower 12 Bit
0x4***	MAX	Ignore the lower 12 Bit
0x8***	Battery level value	Lower12 bits of BCD value (Ex. 0x8087→87%)
0x0***	Voltage value	Lower 12 bits of the BCD value (Ex. 0x0123 → 12.3 V)

DcBatteryInfo

DC battery level / voltage value (for lower right of HOME screen Battery Area) * for VaricamLT only

TypeValue	Inidication	Note
0x0000	(No indication)	Always 0x0000 for non-supported model
0x1***	LOW BATTERY	Ignore the lower 12 Bit
0x2***	EMPTY	Ignore the lower 12 Bit
0x4***	MAX	Ignore the lower 12 Bit
0x8***	Battery level value	Lower12 bits of BCD value (Ex. 0x8087→87%)
0x0***	Voltage value	Lower 12 bits of the BCD value (Ex. 0x0123 → 12.3 V)

Fps

VFR FPS selection value

An integer value of 1 to 240, 255 (0xff) means invalid.

* The FPS display on the HOME screen sometimes displays the value of FREQUENCY depending on the setting, but this value is not linked.

Shutter DEG

SHUTTER (deg) selection value

A value obtained by multiplying the first decimal point of SHUTTER (deg) by 10 (120.3 deg → 1203)

* It is not necessary to refer to this value when SHUTTER = OFF or DISPLAY MODE = SEC

Integer value from 0 to 3600, 0xffff means invalid.

Shutter SEC

SHUTTER (sec) selection value

A value obtained by multiplying the value of numerator X in 1 / X of SHUTTER (sec) expression by 10. (Ex. 1 / 50.2 sec → 502)

* It is not necessary to refer to this value when SHUTTER = OFF or DISPLAY MODE = DEC

Integer value (within 6 digits) from 0 to 999,999, 0xffffffff means invalid.

EI ISO

EI (ISO) selected value

Expressed as a value obtained by dividing the actual value by 1/10 (2500 ISO → 250)

* Do not refer to this value when MODE = dB

Integer value (within 4 digits) of 0 to 9999, 0xffff means invalid.

EI dB

EI (dB) selected value in signed integer value

* Do not refer to this value when MODE = ISO

WHITE

Color temperature value expressed as it is (Ex. 2020 K → 2020)

Integer value (within 5 digits) of 0 to 15000, 0xffff means invalid.

REAR1 Sel(0x0008/7)

Varicam 35 / HS REAR 1 LINE / MIC selection Hard switch status

REAR1 Sel	
0	LINE
1	MIC

REAR2 Sel(0x0008/6)

Varicam 35 / HS REAR 2 LINE / MIC selection Hard switch status

REAR2 Sel	
0	LINE
1	MIC

TC Slave(0x0008/7)

TC Slave(external TC operation) status

TC Slave	
0	TC Slave disabled (normal

	state)
1	TC Slave enabled

Sequence No.

Sequence number of Menu data update

It is incremented every time when following MenuID entries change and this is reset to 0 with the maximum value. It can be used as a trigger for display update at the client.

An integer value from 0 to 255

MenuSize

Number of MenuID entries

The number of entries is fixed by model and software version.

Integer value from 0 to 220

MenuID

The ID assigned for each setting value.

Refer to specifications of each model for menu ID and corresponding setting name.

MenuDataSize

Storage size of menu setting value (Byte).

The size of each menu ID is fixed. Refer to the specifications of each model for the size of each set value.

MenuData

Setting value corresponding to menu ID

The set value is stored as MenuDataSize size data.

For the range and definition of the setting value for each menu ID, refer to the specifications of each model.

8.3 Time Code Notification

8.3.1 Outline

The Time code of the P2 equipment is notified when 0x02 is specified with Type.

The P2 equipment notifies the receiving terminal of time code periodically (**around 2 seconds**) and at the important event (for instance, beginning and end of recording).

It conforms to the TimeCode notation in DIF decided in the SMPTE 314M standard. Refer to this standard for details. However, external terminal shall not use the bit written in figure "To Be Ignored", and shall ignore "DropFrame" bit at 50Hz format.

8.3.2 Composition

Run (7/7)

It notifies whether the time code is running.

Run (Timecode 7/7)	
1	TC run
0	TC Stop

Cam Status (6/5-6)

The state of the P2 equipment by present is notified.

Cam Status (Timecode 7/5-6)	
00	Stop
01	Recoding
10	Playing
11	Reserved

FrameFreq (7/0-4)

The frequency of the recording format set to the P2 equipment is notified.

FrameFreq (Timecode 7/0-4)			
00000	59.94i	01000	25p (over 50i)
00001	29.97p (over 59.94i)	01001	25p (over 50p)
00010	23.98p (over 59.94i)	01010	25p (Native)
00011	23.98pA (over 59.94i)	01011	59.94p
00100	29.97p (Native)	01100	29.97p (over 59.94p)
00101	24p (Native)	01101	23.98p (over 59.94p)
00110	23.98p (Native)	01110	60p
00111	50i	01111	50p

DateTime (8) to (15)

The Date and Time of the P2 equipment is notified.

DT Week (14/5-7)	
0	Sunday
1	Monday
...	...

0	7	6	5	4	3	2	1	0
	Type (0x02)							
1	7	6	5	4	3	2	1	0
	SizeBytes (0x01)							
2	7	6	5	4	3	2	1	0
	Size (0x0F)							
3	7	6	5	4	3	2	1	0
	Drop Frame	Frame Tens			Frame Units			
	-							
4	7	6	5	4	3	2	1	0
	Second Tens	Second Tens			Second Units			
	-							
5	7	6	5	4	3	2	1	0
	Minutes Tens	Minutes Tens			Minutes Units			
	-							
6	7	6	5	4	3	2	1	0
	Hours Tens	Hours Tens			Hours Units			
	-							
7	7	6	5	4	3	2	1	0
	Run	Cam Status			Frame Freq			
	-							
8	7	6	5	4	3	2	1	0
	Invalid	DT Frame Tens			DT Frame Units			
	-							
9	7	6	5	4	3	2	1	0
	DT Second Tens	DT Second Tens			DT Second Units			
	0							
10	7	6	5	4	3	2	1	0
	DT Minutes Tens	DT Minutes Tens			DT Minutes Units			
	0							
11	7	6	5	4	3	2	1	0
	DT Hours Tens	DT Hours Tens			DT Hours Units			
	0							
12	7	6	5	4	3	2	1	0
	0							
13	7	6	5	4	3	2	1	0
	DT Day Tens	DT Day Tens			DT Day Units			
	1	1						
14	7	6	5	4	3	2	1	0
	DT Week	DT Month Tens			DT Month Units			
15	7	6	5	4	3	2	1	0
	DT Year Tens	DT Year Tens			DT Year Units			
16	7	6	5	4	3	2	1	0
	TimeZone Minutes Tens	TimeZone Minutes Tens			TimeZone Minutes Units			
17	7	6	5	4	3	2	1	0
	TimeZone Hours Tens	TimeZone Hours Tens			TimeZone Hours Units			
	+/-	0						

6	Saturday
---	----------

TimeZone (16) to (17)

The Timezone of the P2 equipment is notified.

+/- (17/7)	
0	+
1	-

8.3.3 Notes

The notified time code is for recording use, not playback time code even if P2 equipment is play state.

8.4 RecFile Notification

8.4.1 Outline

The RecFile information of the Varicam equipment is notified when 0x03 is specified with Type.

The Varicam equipment notifies the receiving terminal of recording file information periodically (**around 1 seconds**) and at the important event (for instance, beginning and end of recording).

Start and End timecodes conforms to the TimeCode notation in DIF decided in the SMPTE 314M standard. Refer to this standard for details. However, external terminal shall not use the bit written in figure "To Be Ignored", and shall ignore "DropFrame" bit at 50Hz format.

8.4.2 Composition

FileName Length (3/0-5)

Notify Character length of FileName (maximum 32).

Start Valid (3/6)

It notifies whether the start time code is valid.

Start Timecode Valid	
0	Invalid
1	Valid

End Valid (3/6)

It notifies whether the end time code is valid.

End Timecode Valid	
0	Invalid
1	Valid

Start Timecode (4-7)

Notify the start time code.

Immediately after starting recording, the valid flag becomes invalid and the value is cleared to zero.

End Timecode (8-11)

Notify the recording end time code.

During recording, the valid flag becomes invalid and the value is cleared to zero.

FileName (12-43)

Notify the recording start time code.

During recording, the name of the file currently being recorded,

and the file name of the last recording are notified while recording is stopped.

0	7	6	5	4	3	2	1	0	Type (0x03)
1	7	6	5	4	3	2	1	0	SizeBytes (0x01)
2	7	6	5	4	3	2	1	0	Size (0x29)
3	7	6	5	4	3	2	1	0	FileName Length
	End Valid	Start Valid							
4	7	6	5	4	3	2	1	0	Start Frame Units
	-	Drop Frame	Start Frame Tens						
5	7	6	5	4	3	2	1	0	Start Second Units
	-		Start Second Tens						
6	7	6	5	4	3	2	1	0	Start Minutes Units
	-		Start Minutes Tens						
7	7	6	5	4	3	2	1	0	Start Hours Units
	-		Start Hours Tens						
8	7	6	5	4	3	2	1	0	End Frame Units
	-	Drop Frame	End Frame Tens						
9	7	6	5	4	3	2	1	0	End Second Units
	-		End Second Tens						
10	7	6	5	4	3	2	1	0	End Minutes Units
	-		End Minutes Tens						
11	7	6	5	4	3	2	1	0	End Hours Units
	-		End Hours Tens						
12	7	6	5	4	3	2	1	0	FileName[0]
13	7	6	5	4	3	2	1	0	FileName[1]
⋮									
43	7	6	5	4	3	2	1	0	FileName[31]

9 Communication on 80/TCP Port

The communication that uses 80/TCP port is used so that an external terminal may acquire the content of the data recorded on the P2 card inserted in the P2 equipment.

9.1 Communication Outline

HTTP protocol (RFC 2616) is used for the communication. The following data can be acquired by specifying URL that indicates contents in the P2 equipment from an external terminal on the network.

- Thumbnail image file
- XML file where meta data is described
- Proxy file
- Video file
- Audio file
- Live Streaming (HTTP Live Streaming)

9.2 URL rule

URL that specifies contents except Live Streaming is composed of the following four elements.

http:// (1)P2 equipment IP address/ contents/ (2)Media/ (3)Data type/ (4) File name

【P2equipment IP address】

(1) Internet Protocol address of the P2 equipment is described.

【Media】

(2) Media where the file exists are described. The description method has following two options.

Description method	Definition
Slot Number	The number of the slot where specified "Clip" exists is described.

【Data Type】

(3) Character string specifies data type is described. The content that can be described is as follows.。

character string	definition
icon	It describes when the BMP file of the thumbnail image is acquired, .
clip	It describes when the XML file of meta information is acquired.
proxy	It describes when mp4 file is acquired. It allow to get the same mp4/mov file as recorded in P2 card.
video	It describes when the mxf file of the video file in P2 clip is acquired.
audio	It describes when the mxf file of the audio file in P2 clip is acquired.
processed_proxy	It describes when the mp4 file of the Proxy file is acquired. It allows to get mp4 file for progressive download.
editlist	It describes when the editlist file in P2 clip is acquired.

【File name】

It is specified 6 alphanumeric Name and 3 alphanumeric Suffix. Name is able to get the way of 6.5 Query.

Suffix is "bmp" if Icon, "xml" if clip or editlist, "mov" or "mp4" if proxy or raw_proxy, "mxf" if video or audio. Namely, it is same name as what the file name in P2 card.

9.3 HTTP Live Streaming

M3U8 file for HTTP Live Streaming (confirming to Internet-Draft “draft-pantos-http-live-streaming-05”) is available at following URL.

`http://P2 equipment IP address/hls/hls.m3u8`

M3U8 file contains the list of “segmentation files”. A segmentation file contains short (typically, 1 second) video and audio. Video data is encoded in H.264 and audio data is encoded in AAC. And video and audio are packed into MPEG-2 TS packets.

9.4 Limitation

9.4.1 Stop forwarding at high load

When P2 equipment is processing high-load like recording or playback, the data transfer to the external terminal is stopped. When an external terminal tries to start getting contents, the HTTP error code "503" is returned.

If the P2 equipment becomes high load during the data transfer, P2 equipment may terminate without notify.

9.4.2 Partial Get

When an external terminal cannot acquired all contents data due to the discontinuance of the data transfer as explained in Section 9.4.1 etc., P2 equipment provides Partial Get function (RFC 2616 / section 14.35) of HTTP. The following are added to HTTP header sent from the client of HTTP (external terminal) to the server (P2 equipment).

Range: bytes= *Transferred size-Transfer size of entire file*

An external terminal can request forwarding on the way of the contents data from the P2 equipment.

10 Communication on 554/TCP Port

The communication that uses 554/TCP port is used for RTSP (Real Time Streaming Protocol / RFC2326). After the communication over 554/TCP, an external terminal can get Live Streaming Video over RTP/RTCP (RFC 3550). RTP/RTCP uses UDP ports from 6970 to 7999.

10.1 Communication outline

SDP file for RTSP is available at following URL.

`rtsp:// P2 equipment IP address:554/Video.264`

After getting the SDP file with DESCRIBE method, external terminal must call SETUP method in order to get the information about Video Stream and Audio Stream. PC software that can treat RTSP (e.g. QuickTime and VLC player) will do so automatically. Video data is encoded in H.264 and audio data is encoded in AAC.

Player must return RTCP receiver report periodically. If P2 equipment does not receive RTCP receiver report for 15 seconds, P2 equipment will stop sending RTP stream to the external terminal