

AI Face Detection/AI People Detection/AI Vehicle Detection  
External Interface Specification

V1.07

i-PRO Co., Ltd.

Change log

VER.	Date	Item no.	Comment	Revise trigger
1.00	2022/4	All	First edition	-
1.01	2022/5	2.2.2	*Delete <Gray><Orange><Purple><Pink> from <Shoes><Color>.  *Delete <Gray> from <Bag><Color>. (Supported from app version V1.20)	Software fix
		2.1.2	*Changed the definition of <tt:Color> (Supported from app version V1.20) *Added Table 1.	
		2.1	*Fixed Meta Stream Example * Modify ObjectId to an integer value (Supported from app version V1.20)	
		2.1.3 2.2.3	Changed <Suv> to <SUV>	Document fix
		3.1	Changed trackID trackID=3 -> trackID=4	
1.02	2022/7	2.2.2 2.2.3	Delete <Property name="Color"> (Supported from app version V1.21)	Software version upgrade
1.03	2023/2	2.1.3	Added "Motorcycle" to VehicleInfo	Document fix
		2.2.3	·Corrected the description of the timeout condition. ·Corrected the description of VehicleInfo	
1.04	2023/7	2.2.2 2.2.3	Re-added <Property name="Color"> (Supported from app version V1.70)	Software version upgrade
		3.	New addition	
1.05	2024/2	3.1	Added meta information No. 56~74	Document update
			Added setting to not save csv when the judgment results of age and gender are null. (Supported from app version V1.90)	Software version upgrade
1.06	2024/5	3.1.2.2	Corrected the range of parameter days. Before correction: 1 - 6 After correction: 1 - 7	Document fix
1.07	2024/10	2.3 3.2 4. 5.	New addition (Supported from app version V2.10)	Software version upgrade
		2.1.1	·Add <tt:ClassCandidate> ·Changed so that Max=999 is given when Age > Min=61. (Supported from app version V2.10)	

			<ul style="list-style-type: none"> <li>·Add &lt;tt:ClassCandidate&gt; and &lt;tt:Image&gt;</li> <li>·Changed so that Max=999 is given when Age &gt; Min=61.</li> <li>·Change XML namespace of Age,Hair,Gender,Accessory,Length,Color,FacialHair,Beard,Opticals,Hat,Mask,Wear from tt: to fc:.</li> </ul> (Supported from app version V2.10)	
		2.1.3	Add the followings. <ul style="list-style-type: none"> <li>·&lt;tt:Color&gt; in RGB format</li> <li>·&lt;tt:ClassCandidate</li> <li>·&lt;tt:Image&gt;</li> </ul> (Supported from app version V2.10)	
		2.2.2	Corrected transmission timing.	Document fix

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## 1. Introduction

This document describes the specifications for the external interface of AI Face Detection, AI People Detection and AI Vehicle Detection.

### 1.1. Functional specifications

AI Face Detection detects the face and determines the best shot. In addition, for the thumbnail determined to be the best shot, feature amount extraction for face matching and gender age estimation processing are performed. Thumbnails and meta information (gender and age information or passed location information) can be acquired as ONVIF® meta information (Features for face matching are not disclosed). Meta information can be saved as csv and acquired by CGI.

AI People Detection detects a person and determines the best shot. In addition, the person attribute estimation process is performed on the thumbnail determined to be the best shot. Thumbnails and meta information (attribute information or passed location information) can be acquired as ONVIF® meta information. When the meta information (attribute information) matches the watchlist, the watchlist alarm is notified as TCP alarm and HTTP alarm. Meta information can be saved as csv and acquired by CGI.

AI Vehicle Detection detects two-wheeled vehicles / four-wheeled vehicles and determines the best shot. In addition, vehicle type / vehicle color estimation processing is performed on the thumbnail determined to be the best shot. Thumbnails and meta information (attribute information or passed location information) can be acquired as ONVIF® meta information. When the meta information (attribute information) matches the watchlist, the watchlist alarm is notified as TCP alarm and HTTP alarm.

\*ONVIF is the trademark of ONVIF Inc.

## 2. ONVIF Meta Stream

There are two types of ONVIF meta information as follows.

[1] Analytics stream : The detection frame information is sent regularly. See below for the transmission cycle.

Network Camera other than Multi-Sensor Camera :

(When the camera's imaging mode is set to 30fps) 10fps

(When the camera's imaging mode is set to 25fps) 8.3fps

Multi-Sensor Camera :

(When the camera's imaging mode is set to 15fps/30fps) 3.75fps

(When the camera's imaging mode is set to 12.5fps/25fps) 3.1fps

[2] Event stream : Send thumbnails and meta information. The transmission interval is different for each applications.

## 2.1. Analytics Stream

The format of Analytics Stream is different for each applications.

### 2.1.1. AI Face Detection

#### 2.1.1.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
ApiSource	AIFaceDetection	Fixed value
ObjectId	4 byte integer	Detected object ID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object (coordinate of upper-left position and lower-right position)
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Class	- Face(object) - 0 ~ 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
Class - ClassCandidate - Type - Likelihood	-Face (Type) -0~1 (Likelihood) (up to 2 decimal places)	Kind of object and likelihood Face: face  Can be changed to grant or not by sending CGI. (*1)
HumanFace - Age - Min, Max	(Min, Max)= (0,10),(11,20),(21,30),(31,40), (41,50),(51,60),(61,999)	Age * This is applied when the best shot is confirmed. * This is not applied when the value of HumanFace -> Accessory -> Mask -> Wear is true.
HumanFace - Gender	Male, Female	Gender * This is applied when the best shot is confirmed.
HumanFace - Accessory - Mask - Wear	false, true	Whether or not human is wearing a mask. * This is applied when the best shot is confirmed.

\*1 It is possible to select whether or not to grant by sending the following CGI.

[CGI for setting when not to grant]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=iVmdApp&prefType=Integer&prefName=onvif\\_analytics\\_classcandidate&value=0](http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=iVmdApp&prefType=Integer&prefName=onvif_analytics_classcandidate&value=0)

[CGI setup for granting (default setting)].

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=iVmdApp&prefType=Integer&prefName=onvif\\_analytics\\_classcandidate&value=1](http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=iVmdApp&prefType=Integer&prefName=onvif_analytics_classcandidate&value=1)

### 2.1.1.2. Meta Stream Example

When `onvif_analytics_classcandidate=1`,

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema"
xmlns:fc="http://www.onvif.org/ver20/analytics/humanface">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" ApiSource="AIFaceDetection">
      <tt:Object ObjectId="12345">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.13" />
          </tt:Shape>
          <tt:Class>
            <tt:ClassCandidate>
              <tt:Type>Face</tt:Type>
              <tt:Likelihood>0.82</tt:Likelihood>
            </tt:ClassCandidate>
            <tt:Type Likelihood="0.82">Face</tt:Type>
          </tt:Class>
          <tt:HumanFace>
            <fc:Age>
              <tt:Min>11</tt:Min>
              <tt:Max>20</tt:Max>
            </fc:Age>
            <fc:Gender>Male</fc:Gender>
            <fc:Accessory>
              <fc:Mask>
                <fc:Wear>>false</fc:Wear>
              </fc:Mask>
            </fc:Accessory>
          </tt:HumanFace>
        </tt:Appearance>
      </tt:Object>
    </tt:Frame>
```



```

<tt:Frame.UtcTime="2020-01-20T10:00:18.20Z">
    ... (another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>

```

When onvif\_analytics\_classcandidate=0,

```

<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema"
xmlns:fc="http://www.onvif.org/ver20/analytics/humanface">
  <tt:VideoAnalytics>
    <tt:Frame.UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIFaceDetection">
      <tt:Object.ObjectId="12345">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class>
            <tt:Type.Likelihood="0.81">Face</tt:Type>
          </tt:Class>
          <tt:HumanFace>
            <fc:Age>
              <tt:Min>11</tt:Min>
              <tt:Max>20</tt:Max>
            </fc:Age>
            <fc:Gender>Male</fc:Gender>
            <fc:Accessory>
              <fc:Mask>
                <fc:Wear>>false</fc:Wear>
              </fc:Mask>
            </fc:Accessory>
          </tt:HumanFace>
        </tt:Appearance>
      </tt:Object>
    </tt:Frame>

```

```
<tt:Frame.UtcTime="2020-01-20T10:00:18.20Z">
  ... (another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>
```

## 2.1.2. AI People Detection

### 2.1.2.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
ApiSource	AIPeopleDetection	Fixed value
ObjectId	4 byte integer	Detected object ID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object (coordinate of upper-left position and lower-right position)
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Class - ClassCandidate - Type - Likelihood	-Human (Type) -0~1 (Likelihood) (up to 2 decimal places)	Kind of object and likelihood Human: human  * Not applied when "Give the ClassCandidate to Analytics Stream" is set to "Off".
Class	- Human(object) - 0 ~ 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
HumanFace - Age - Min, Max	(Min, Max)= (0,10),(11,20),(21,60), (61,999)	Age * This is applied when the best shot is confirmed.
HumanFace - Gender	Male, Female	Gender * This is applied when the best shot is confirmed.
HumanFace - Hair - length - Color	- Long, Short  - (X,Y,Z) : RGB values	Hairstyle and hair color * This is applied when the best shot is confirmed. * Refer to Table 1 for an XYZ (RGB) value and the corresponding table of color.
HumanFace - FacialHair - Beard	false, true	Whether or not human has a beard. * This is applied when the best shot is confirmed.
HumanFace - Accessory - Optionals - Wear	false, true	Whether or not human is wearing sunglasses. * This is applied when the best shot is confirmed.

HumanFace - Accessory - Hat - Wear	false, true	Whether or not human is wearing a hat. * This is applied when the best shot is confirmed.
HumanFace - Accessory - Mask - Wear	false, true	Whether or not human is wearing a mask. * This is applied when the best shot is confirmed.
HumanBody - Clothing - Tops - Category - Color	- LongSleeve, ShortSleeve  - (X,Y,Z) : RGB values	Type and Color of tops * This is applied when the best shot is confirmed. * Refer to Table 1 for an XYZ (RGB) value and the corresponding table of color.
HumanBody - Clothing - Bottoms - Category - Color	- Trousers, Shorts  - (X,Y,Z) : RGB values	Type and Color of bottoms * This is applied when the best shot is confirmed. * Refer to Table 1 for an XYZ (RGB) value and the corresponding table of color.
HumanBody - Clothing - Shoes - Color	- (X,Y,Z) : RGB values	Color of shoes * This is applied when the output setting is set to "On".
HumanBody - Belonging - Bag - Color	- (X,Y,Z) : RGB values	Color of bag * This is applied when the output setting is set to "On"
Image	Base64 encoded	JPEG image  * Not applied when "Give the Image to Analytics Stream" is set to "Off". * This is applied when the best shot is confirmed.
Properties - DirectionNamed	Up/Right/Down/Left/UpRight/UpLeft/ DownRight/DownLeft	Direction of movement

**Table 1: XYZ (RGB) value and the corresponding table of color**

<b>Color</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
Black	0	0	0
Brown	165	42	42
White	255	255	255
Gray	128	128	128
Green	0	255	0
Red	255	0	0
Blue	0	0	255
Yellow	255	255	0
Orange	255	165	0
Purple	128	0	128
Pink	255	192	203
Gold * Only as for the hair color	255	215	0

### 2.1.2.2. Meta Stream Example

“Give the ClassCandidate to Analytics Stream”={On}, “Give the Image to Analytics Stream”={Off}

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema"
xmlns:fc="http://www.onvif.org/ver20/analytics/humanface"
xmlns:bd="http://www.onvif.org/ver20/analytics/humanbody">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIPeopleDetection">
      <tt:Object ObjectId="12345">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class>
            <tt:ClassCandidate>
              <tt:Type>Human</tt:Type>
              <tt:Likelihood>0.81</tt:Likelihood>
            </tt:ClassCandidate>
            <tt:Type Likelihood="0.81">Human</tt:Type>
          </tt:Class>
          <tt:HumanFace>
            <fc:Age>
              <tt:Min>11</tt:Min>
              <tt:Max>20</tt:Max>
            </fc:Age>
            <fc:Gender>Male</fc:Gender>
            <fc:Hair>
              <fc:Length>Short</fc:Length>
              <fc:Color>
                <tt:ColorCluster>
                  <tt:Color X="0" Y="255" Z="0"
                  Colorspace="http://www.onvif.org/ver10/colorspace/RGB"/
                  >
                </tt:ColorCluster>
              </fc:Color>
            </fc:Hair>
          </tt:HumanFace>
        </tt:Appearance>
      </tt:Object>
    </tt:Frame>
  </tt:VideoAnalytics>
</tt:MetadataStream>
```

```

    </fc:Color>
  </fc:Hair>
  <fc:FacialHair>
    <fc:Beard>true</fc:Beard>
  </fc:FacialHair>
  <fc:Accessory>
    <fc:Opticals>
      <fc:Wear>>false</fc:Wear>
    </tt:Opticals>
    <fc:Hat>
      <fc:Wear>true</fc:Wear>
    </fc:Hat>
    <fc:Mask>
      <fc:Wear>>false</fc:Wear>
    </fc:Mask>
  </fc:Accessory>
</tt:HumanFace>
<tt:HumanBody>
  <bd:Clothing>
    <bd:Tops>
      <bd:Category>LongSleeve</bd:Category>
      <bd:Color>
        <tt:ColorCluster>
          <tt:Color X="0" Y="255" Z="0"
Colorspace="http://www.onvif.org/ver10/colorspace/RGB"/
>
        </tt:ColorCluster>
      </bd:Color>
    </bd:Tops>
    <bd:Bottoms>
      <bd:Category>Trousers</bd:Category>
      <bd:Color>
        <tt:ColorCluster>
          <tt:Color X="0" Y="255" Z="0"
Colorspace="http://www.onvif.org/ver10/colorspace/RGB"/
>

```

```

        </tt:ColorCluster>
        </bd:Color>
        </bd:Bottoms>
        </bd:Clothing>
        </tt:HumanBody>
    </tt:Appearance>
    <tt:Extension xmlns="">
        <Properties>
            <Property name="DirectionNamed">Up</Property>
        </Properties>
    </tt:Extension>
</tt:Object>
</tt:Frame>
<tt:Frame UtcTime="2020-01-20T10:00:18.20Z">
    ... (another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>

```

“Give the ClassCandidate to Analytics Stream”={Off}, “Give the Image to Analytics Stream”={On}

```

<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema"
xmlns:fc="http://www.onvif.org/ver20/analytics/humanface"
xmlns:bd="http://www.onvif.org/ver20/analytics/humanbody">
    <tt:VideoAnalytics>
        <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIPeopleDetection">
            <tt:Object ObjectId="12345">
                <tt:Appearance>
                    <tt:Shape>
                        <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
                        <tt:CenterOfGravity x="0.73" y="0.11" />
                    </tt:Shape>
                    <tt:Class>
                        <tt:Type Likelihood="0.81">Human</tt:Type>
                    </tt:Class>
                </tt:Appearance>
            </tt:Object>
        </tt:Frame>
    </tt:VideoAnalytics>
</tt:MetadataStream>

```



```

<tt:HumanFace>
  <fc:Age>
    <tt:Min>11</tt:Min>
    <tt:Max>20</tt:Max>
  </fc:Age>
  <fc:Gender>Male</fc:Gender>
  <fc:Hair>
    <fc:Length>Short</fc:Length>
    <fc:Color>
      <tt:ColorCluster>
        <tt:Color X="0" Y="255" Z="0"
          Colorspace="http://www.onvif.org/ver10/colorspace/RGB"/
        >
      </tt:ColorCluster>
    </fc:Color>
  </fc:Hair>
  <fc:FacialHair>
    <fc:Beard>true</fc:Beard>
  </fc:FacialHair>
  <fc:Accessory>
    <fc:Opticals>
      <fc:Wear>>false</fc:Wear>
    </tt:Opticals>
    <fc:Hat>
      <fc:Wear>>true</fc:Wear>
    </fc:Hat>
    <fc:Mask>
      <fc:Wear>>false</fc:Wear>
    </fc:Mask>
  </fc:Accessory>
</tt:HumanFace>
<tt:HumanBody>
  <bd:Clothing>
    <bd:Tops>
      <bd:Category>LongSleeve</bd:Category>
    <bd:Color>

```

```

        <tt:ColorCluster>
            <tt:Color X="0" Y="255" Z="0"
Colorspace="http://www.onvif.org/ver10/colospace/RGB"/
>
            </tt:ColorCluster>
        </bd:Color>
    </bd:Tops>
    <bd:Bottoms>
        <bd:Category>Trousers</bd:Category>
        <bd:Color>
            <tt:ColorCluster>
                <tt:Color X="0" Y="255" Z="0"
Colorspace="http://www.onvif.org/ver10/colospace/RGB"/
>
                </tt:ColorCluster>
            </bd:Color>
        </bd:Bottoms>
    </bd:Clothing>
</tt:HumanBody>
    <tt:Image>/9j/gBMAB ((*snip*)) v1/CgR//2Q==</tt:Image>
</tt:Appearance>
<tt:Extension xmlns="">
    <Properties>
        <Property name="DirectionNamed">Up</Property>
    </Properties>
</tt:Extension>
</tt:Object>
</tt:Frame>
<tt:Frame UtcTime="2020-01-20T10:00:18.20Z">
    ... (another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>

```

### 2.1.3. AI Vehicle Detection

#### 2.1.3.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
ApiSource	AIVehicleDetection	Fixed value
ObjectId	4 byte integer	Detected object ID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object (coordinate of upper-left position and lower-right position)
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Color - ColorCluster	(X,Y,Z) : RGB value	Color of vehicle  By sending CGI, it is possible to select whether to send the data as RGB values or as a string (*1) *For the correspondence between XYZ (RGB) values and colors, see <b>Table 2</b> .
Class - ClassCandidate - Type - Likelihood	- Vehical (Type) - 0~1 (Likelihood) (up to 2 decimal places)	Kind of object and likelihood  Vehical: vehicle * Not applied when "Give the ClassCandidate to Analytics Stream" is set to "Off".
Class	- Vehicle(object) - 0 ~ 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
VehicleInfo	- Pickup, Truck, Bus, SUV, Van, Sedan, Motorcycle - 0 ~ 1(Likelihood) (up to 2 decimal places)	Kind of vehicle and likelihood
Image	Base64 encoded	JPEG image  * Not applied when "Give the Image to Analytics Stream" is set to "Off". * This is applied when the best shot is confirmed.

Color	Gray, White, Red, Black, Blue, Green, Brown, Yellow, Purple, Pink	Color of vehicle  By sending CGI, it is possible to select whether to send the data as RGB values or as a string (*1)
Properties - DirectoinNamed	Up/Right/Down/Left/UpRight/ UpLeft/DownRight/DownLeft	Direction of movement

**Table 2 : XYZ (RGB) value and color correspondence table**

Color	X	Y	Z
Black	0	0	0
Brown	165	42	42
White	255	255	255
Gray	128	128	128
Green	0	255	0
Red	255	0	0
Blue	0	0	255
Yellow	255	255	0
Purple	128	0	128
Pink	255	192	203

\*1 The transmission format of the Color tag can be selected by sending the following CGI.

[CGI setting for sending car color as RGB value (default setting)]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=VehicleBestshotApp&prefType=Integer&prefName=onvif\\_analytics\\_color\\_type&value=0](http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=VehicleBestshotApp&prefType=Integer&prefName=onvif_analytics_color_type&value=0)

[CGI setting for sending car color as a string].

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=VehicleBestshotApp&prefType=Integer&prefName=onvif\\_analytics\\_color\\_type&value=1](http://192.168.0.10/cgi-bin/adam.cgi?methodName=setApplicationPreference&appName=VehicleBestshotApp&prefType=Integer&prefName=onvif_analytics_color_type&value=1)

### 2.1.3.2. Meta Stream Example

“Give the ClassCandidate to Analytics Stream”={On}, “Give the Image to Analytics Stream”={Off}, onvif\_analytics\_color\_type=0

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" ApiSource="AIVehicleDetection">
      <tt:Object ObjectId="12345">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Color>
            <tt:ColorCluster>
              <tt:Color X="0" Y="0" Z="0" ColorSpace="http://www.onvif.org/ver
10/colospace/RGB"/>
            </tt:ColorCluster>
          </tt:Color>
          <tt:Class>
            <tt:ClassCandidate>
              <tt:Type>Vehical</tt:Type>
              <tt:Likelihood>0.81</tt:Likelihood>
            </tt:ClassCandidate>
            <tt:Type Likelihood="0.81">Vehicle</tt:Type>
          </tt:Class>
          <tt:VehicleInfo>
            <tt:Type Likelihood="0.81">Car</tt:Type>
          </tt:VehicleInfo>
        </tt:Appearance>
        <tt:Extension xmlns="">
          <Properties>
            <Property name="DirectionNamed">Up</Property>
          </Properties>
        </tt:Extension>
      </tt:Object>
    </tt:Frame>
  </tt:VideoAnalytics>
</tt:MetadataStream>
```

```

    </tt:Object>
  </tt:Frame>
  <tt:Frame UtcTime="2020-01-20T10:00:18.20Z">
    ... (another frame information)
  </tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>

```

“Give the ClassCandidate to Analytics Stream”={Off}, “Give the Image to Analytics Stream”={On}, onvif\_analytics\_color\_type=1

```

<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIVehicleDetection">
      <tt:Object ObjectId="12345">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class>
            <tt:Type Likelihood="0.81">Vehicle</tt:Type>
          </tt:Class>
          <tt:VehicleInfo>
            <tt:Type Likelihood="0.81">Car</tt:Type>
          </tt:VehicleInfo>
          <tt:Image>/9j//gBMAB ((*snip*)) v1/CgR//2Q==</tt:Image>
        </tt:Appearance>
        <tt:Color>Black</tt:Color>
        <tt:Extension xmlns="">
          <Properties>
            <Property name="DirectionNamed">Up</Property>
          </Properties>
        </tt:Extension>
      </tt:Object>
    </tt:Frame>

```

```
<tt:Frame.UtcTime="2020-01-20T10:00:18.20Z">
  ... (another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>
```

## 2.2. Event Stream (thumbnails and meta information)

The format of Event Stream is different for each applications.

### 2.2.1. AI Face Detection

The transmission interval of thumbnails and meta information is 1 second or 2 seconds (initial value: 1 second) interval, which can be changed by setting.

The maximum number of faces transmitted at one time is 6 faces at 1-second intervals and 12 faces at 2-second intervals. If more than the maximum number of faces are shown, the face information with the smallest number of faces to be sent is given priority for transmission.

#### 2.2.1.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
ApISource	AIFaceDetection	Fixed value
Objectld	4 byte integer	Detected object ID
GUID	Hex numbers	UUID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object * Coordinates (-1 ~ 1) of best shot for the entire angle of view.
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Class	- Face(object) - 0, 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
Image	Base64 encoded	JPEG image
HumanFace - FeatureValue - L2Norm - feature-value-version	Non-disclosure	Non-disclosure
HumanFace - start-time	Date and Time(UTC)	Date and Time when the face is detected for the first time.
HumanFace - bs-frame	- X coordinate, Y coordinate, Width, Height Decimal numbers (0 ~320)	Coordinates(upper left) of the frame of the detected face of the best shot. * QVGA



HumanFace - thumb-frame	- X coordinate, Y coordinate, Width, Height Decimal numbers (0 ~320)	Coordinates with Upper left of thumbnail image of face as the origin.
HumanFace - face-info	Decimal numbers 0 fixed,0 fixed, Score of face detection x100	Face-likeness of the frame of the detected face.
HumanFace - bs-score	Decimal numbers 0 fixed, 0~3000	Score of best shot
HumanFace - send-premise	Hex numbers  - Upper 4bit : Timing of transmitting the best shot 1: The timing when the tracking is finished 2 : The timing when the best shot is transmit periodically  - Upper 5-8bits : Reason of transmitting best shot 0 : Best shot is unrenewed 1 : Best shot is renewed	This parameter shows the timing and reason for transmitting thumbnails, and is classified as follows.  - Timing of periodic transmission(Best shot is renewed) - Timing when tracking is completed(Best shot is renewed) - Timing of periodic transmission(Best shot is unrenewed) - Timing when tracking is completed(Best shot is unrenewed)
HumanFace -Mask	false, true	Whether or not human is wearing a mask.
HumanFace -Age - <Range min="0" max="10"> - <Range min="11" max="20"> - <Range min="21" max="30"> - <Range min="31" max="40"> - <Range min="41" max="50"> - <Range min="51" max="60"> - <Range min="61">	0 ~ 1 (up to 2 decimal places)	Likelihood of age  * This is not applied when the value of HumanFace -> Wear is true.
HumanFace -Gender - Male	0 ~ 1 (up to 2 decimal places)	Likelihood of gender

- Female		
Properties - RecommendedSize	false, true	If the width of the frame of detected human meets the recommended detection size, the value will be true. If not satisfied, the value will be false.
Properties - DetectPixelWidth	0 ~ Maximum width of camera resolution	Width of face [pixel] * It is not the size of the best shot, but the size of the detected object before resizing.
Properties - DetectPixelHeight	0 ~ Maximum height of camera resolution	Height of face [pixel] *It is not the size of the best shot, but the size of the detected object before resizing.

### 2.2.1.2. Meta Stream Example

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIFaceDetection">
      <tt:Object ObjectId="107"
GUID="7CE62E87D1BB845F4A256728FED42A53">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="0.78"/>
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class><tt:Type Likelihood="0.82">Face</tt:Type></tt:Class>
          <tt:Image>(base64 image data)</tt:Image>
          <tt:Extension xmlns="">
            <HumanFace>
              <FeatureValue> (*snip*) </FeatureValue>
              <L2Norm> (*snip*) </L2Norm>
              <start-time>2020-01-20T10:00:03.60Z</start-time>
              <bs-frame>50,34,18,21</bs-frame>
              <thumb-frame>107,114,16,15</thumb-frame>
              <face-info>0,0,870</face-info>
              <bs-score>0,1234</bs-score>
              <send-premise>21000000</send-premise>
              <feature-value-version>0.1</feature-value-version>
              <Mask>false</Mask>
              <Age>
                <Range min="0" max="10">0.00</Range>
                <Range min="11" max="20">0.00</Range>
                <Range min="21" max="30">0.02</Range>
                <Range min="31" max="40">0.08</Range>
                <Range min="41" max="50">0.25</Range>
                <Range min="51" max="60">0.48</Range>
                <Range min="61">0.15</Range>
              </Age>
            </HumanFace>
          </tt:Extension>
        </tt:Appearance>
      </tt:Object>
    </tt:Frame>
  </tt:VideoAnalytics>
</tt:MetadataStream>
```

```
        </Age>
        <Gender>
            <Male>0.37</Male>
            <Female>0.63</Female>
        </Gender>
    </HumanFace>
</tt:Extension>
</tt:Appearance>
<tt:Extension xmlns="">
    <Properties>
        <Property name="RecommendedSize">true</Property>
        <Property name="DetectPixelWidth">120</Property>
        <Property name="DetectPixelHeight">120</Property>
    </Properties>
</tt:Extension>
</tt:Object>
</tt:Frame>
<tt:Frame UtcTime="2020-01-20T10:00:18.20Z" AplSource="AIFaceDetection">
    ...(another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>
```

## 2.2.2. AI People Detection

Thumbnails and meta information are sent at the timing when the best shot is determined; after one transmission, it takes at least 2 seconds before the next transmission.

The maximum number of people that can be transmitted at one time is 20.

### 2.2.2.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
AplSource	AIPeopleDetection	Fixed value
ObjectId	4 byte integer	Detected object ID
GUID	Hex numbers	UUID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object * Coordinates (-1 ~ 1) of best shot for the entire angle of view.
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Class	- Human(object) - 0, 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
Image	Base64 encoded	JPEG image
HumanFace - Age - <Range min="0" max="10"> - <Range min="11" max="20"> - <Range min="21" max="60"> - <Range min="61">	0 ~ 1 (up to 2 decimal places)	Likelihood of age
HumanFace - Gender - Male, Female	0 ~ 1 (up to 2 decimal places)	Likelihood of gender
HumanFace - Hair - length - Long, Short_Bald, Hat - Color	0 ~ 1 (up to 2 decimal places)	Likelihood of hairstyle and hair color

- Black, Brown, White, Gray, Gold		
HumanFace - FacialHair - Beard, NoBeard	0 ~ 1 (up to 2 decimal places)	Likelihood of whether or not human has a beard.
HumanFace - Accessory - Optical - Sunglass, NoGlass	0 ~ 1 (up to 2 decimal places)	Likelihood of whether or not human is wearing sunglasses.
HumanFace - Accessory - Mask - Mask, NoMask	0 ~ 1 (up to 2 decimal places)	Likelihood of whether or not human is wearing a mask.
HumanBody - Clothing - Tops - Category - LongSleeve, ShortSleeve - Color - Black, Brown, White, Gray, Green, Red, Blue, Yellow, Orange, Purple, Pink	0 ~ 1 (up to 2 decimal places)	Likelihood of type and Color of tops
HumanBody - Clothing - Bottoms - Category - Trousers, Shorts - Color - Black, Brown, White, Gray, Green, Red, Blue, Yellow, Orange, Purple, Pink	0 ~ 1 (up to 2 decimal places)	Likelihood of type and Color of bottoms
HumanBody - Clothing - Shoes - Color	0 ~ 1 (up to 2 decimal places)	Likelihood of color of shoes

- Black, Brown, White, Green, Red, Blue, Yellow		
HumanBody - Belonging - Bag - Bag - NoBag - Color - Black, Brown, White, Green, Red, Blue, Yellow, Orange, Purple, Pink	0 ~ 1  (up to 2 decimal places)	Likelihood of color of bag
UpperBodyCoordinate	- left, right : 0 ~ Maximum width of best shot  - top, bottom : 0 ~ Maximum height of best shot	Detection frame information of head in the beset shot [pixel]
FaceCoordinate	- left, right : 0 ~ Maximum width of best shot  - top, bottom : 0 ~ Maximum height of best shot	Detection frame information of face in the beset shot [pixel]
Properties - DirectionNamed	Up/Right/Down/Left/UpRig ht/UpLeft/DownRight/Down Left	Direction of movement
Properties -Color	false, true	True for color video, false for black-and- white video.
Properties - Wholebody	false, true	True if the whole body is detected, false if not detected.
Properties - Upperbody	false, true	True if the head is detected, false if not.

Properties - Face	false, true	If the face is detected, it is true, and if it is not detected, it is false.
Properties - RecommendedSize	false, true	If the width of the frame of detected human meets the recommended detection size, the value will be true. If not satisfied, the value will be false.
Properties - DetectPixelWidth	0 ~ Maximum width of camera resolution	Width of human [pixel] * It is not the size of the best shot, but the size of the detected object before resizing.
Properties - DetectPixelHeight	0 ~ Maximum height of camera resolution	Height of human [pixel] *It is not the size of the best shot, but the size of the detected object before resizing.
Properties - Shoes	0 ~ 1	Likelihood of whether or not human puts on shoes.
Properties - Bag	0 ~ 1	Likelihood of whether or not human has a bag.



### 2.2.2.2. Meta Stream Example

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIPeopleDetection">
      <tt:Object ObjectId="101" GUID="28FED42A7BB845F4A2567CE62E87D153">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class><tt:Type Likelihood="0.8">Human</tt:Type></tt:Class>
          <tt:Image>(base64 image data)</tt:Image>
          <tt:Extension xmlns="">
            <HumanFace>
              <Age>
                <Range min="21" max="60">0.85</Range>
              </Age>
              <Gender>
                <Male>0.99</Male>
              </Gender>
              <Hair>
                <length>
                  <Short_Bald>0.99</Short_Bald>
                </length>
                <Color>
                  <Gray>0.73</Gray>
                </Color>
              </Hair>
              <FacialHair>
                <Beard>0.91</Beard>
              </FacialHair>
              <Accessory>
                <Opticals>
                  <Sunglass>0.28</Sunglass>
                </Opticals>
              </Accessory>
            </HumanFace>
          </tt:Extension>
        </tt:Appearance>
      </tt:Object>
    </tt:Frame>
  </tt:VideoAnalytics>
</tt:MetadataStream>
```

```

        <NoGlass>0.71</NoGlass>
    </Opticals>
    <Mask>
        <NoMask>0.99</NoMask>
    </Mask>
</Accessory>
</HumanFace>
<HumanBody>
    <Clothing>
        <Tops>
            <Category>
                <LongSleeve>0.98</LongSleeve>
            </Category>
            <Color>
                <Black>0.95</Black>
                <Gray>0.21</Gray>
            </Color>
        </Tops>
        <Bottoms>
            <Category>
                <Trousers>0.98</Trousers>
            </Category>
            <Color>
                <Black>0.99</Black>
            </Color>
        </Bottoms>
    </Clothing>
</HumanBody>
</tt:Extension>
<UpperBodyCoordinate left="10" top="12" right="40" bottom="120" />
<FaceCoordinate left="15" top="18" right="35" bottom="110" />
</tt:Appearance>
<tt:Extension xmlns="">
    <Properties>
        <Property name="DirectionNamed">Up</Property>
        <Property name="Color">>true</Property>
    </Properties>

```

```
<Property name="Wholebody">true</Property>
<Property name="Upperbody">true</Property>
<Property name="Face">true</Property>
<Property name="RecommendedSize">true</Property>
<Property name="DetectPixelWidth">120</Property>
<Property name="DetectPixelHeight">500</Property>
</Properties>
</tt:Extension>
</tt:Object>
<tt:Object ObjectId="102" GUID="4A2567CE62E87D15328FED42A7BB845F">
  ...
</tt:Object>
</tt:Frame>
<tt:Frame UtcTime="2020-01-20T10:00:18.20Z" AplSource="AIPeopleDetection">
  ...(another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>
```

### 2.2.3. AI Vehicle Detectoin

Metadata is sent after the vehicle has been tracked or when the tracking is time-out (\*). The maximum number of vehicles that can be transmitted at one time is 20.

\* The time-out conditions are shown below.

Condition 1: When the detection duration of the same ID reaches 10 seconds from the start of tracking.

Condition 2: When the detection duration of the same ID reaches 1 hour after judging that it has timed out. (Metadata for parked vehicles will be sent every hour.)

#### 2.2.3.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
ObjectId	4 byte integer	Detected object ID
GUID	Hex numbers	UUID
BoundingBox	-1 ~ 1 (up to 2 decimal places)	Rectangle area of the detected object * Coordinates (-1 ~ 1) of best shot for the entire angle of view.
CenterOfGravity	-1 ~ 1 (up to 2 decimal places)	Midpoint of BoundingBox
Class	- Vehicle(object) - 0, 1(Likelihood) (up to 2 decimal places)	Kind of object and likelihood
Image	Base64 encoded	JPEG image
VehicleInfo - Type - Sedan, Van, SUV, Truck, Bus, Pickup, TwoWheels	0 ~ 1 (up to 2 decimal places)	Likelihood of model of car
VehicleInfo - Color - Black, Brown, White, Gray, Green, Red, Blue, Yellow, Purple, Pink	0 ~ 1 (up to 2 decimal places)	Likelihood of color of car

Properties - DirectionNamed	Up/Right/Down/Left/UpRight /UpLeft/DownRight/DownLeft	Direction of movement
Properties -Color	false, true	True for color video, false for black-and-white video.
Properties - RecommendedSize	false, true	If the width of the detection frame meets the recommended detection size, the value will be true. If not satisfied, the value will be false.
Properties - DetectPixelWidth	0 ~ Maximum width of camera resolution	Width of car [pixel] * It is not the size of the best shot, but the size of the detected object before resizing.
Properties - DetectPixelHeight	0 ~ Maximum height of camera resolution	Height of car [pixel] *It is not the size of the best shot, but the size of the detected object before resizing.

### 2.2.3.2. Meta Stream Example

```
<?xml version="1.0" encoding="utf-8"?>
<tt:MetadataStream xmlns:tt="http://www.onvif.org/ver10/schema">
  <tt:VideoAnalytics>
    <tt:Frame UtcTime="2020-01-20T10:00:08.20Z" AplSource="AIVehicleDetection">
      <tt:Object ObjectId="105" GUID="BB845F4A256728FED42A7CE62E87D153">
        <tt:Appearance>
          <tt:Shape>
            <tt:BoundingBox left="-0.20" top="0.99" right="0.83" bottom="-0.78" />
            <tt:CenterOfGravity x="0.73" y="0.11" />
          </tt:Shape>
          <tt:Class><tt:Type Likelihood="0.82">Vehicle</tt:Type></tt:Class>
          <tt:Image>(base64 image data)</tt:Image>
          <tt:Extension xmlns="">
            <VehicleInfo>
              <Type>
                <SUV>0.98</SUV>
              </Type>
              <Color>
                <Blue>0.96</Blue>
              </Color>
            </VehicleInfo>
          </tt:Extension>
        </tt:Appearance>
        <tt:Extension xmlns="">
          <Properties>
            <Property name="DirectionNamed">Up</Property>
            <Property name="Color">true</Property>
            <Property name="RecommendedSize">true</Property>
            <Property name="DetectPixelWidth">120</Property>
            <Property name="DetectPixelHeight">500</Property>
          </Properties>
        </tt:Extension>
      </tt:Object>
      <tt:Object ObjectId="105" GUID="BB845F4A256728FED42A7CE62E87D153">
        ...
      </tt:Object>
    </tt:Frame>
  </tt:VideoAnalytics>
</tt:MetadataStream>
```

```
</tt:Object>
</tt:Frame>
<tt:Frame UtcTime="2020-01-20T10:00:18.20Z" AplSource="AIVehicleDetection">
  ...(another frame information)
</tt:Frame>
</tt:VideoAnalytics>
</tt:MetadataStream>
```

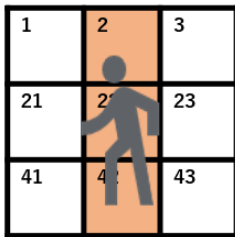




000000110000000000000000001111000000000000111111000000000000111111000000000011  
1111000000000000001111110000000000000011100000000000000000100000000000000000

\*1 The cell to be set as 1 among the passed locations where a person or a vehicle has passed can be selected by sending the following CGI.

[The entire person or vehicle is set to 1 (default setting)]



■AI Face Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=)

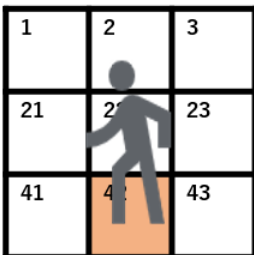
■AI People Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=)

■AI Vehicle Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjowfX0=)

[Only the foot position of the person or vehicle shall be 1]



■ AI Face Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=)

■ AI People Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=)

■ AI Vehicle Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoxfX0=)

[Only the center position of the person or vehicle is 1]



■ AI Face Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=)

■ AI People Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=)

■ AI Vehicle Detection

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=VehicleBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se2NhbGN1bGF0ZV9sb2NhdGlvbjoyfX0=)



```

000000110000000000001110000000000000000011100000000000000000000000000000000000000000
0000000000000000"/>
    </tt:Data>
  </tt:Message>
</wsnt:Message>
</wsnt:NotificationMessage>
</tt:Event>
</tt:MetaDataStream>

```

### 2.3.2. AI People Detection

The passed location information is transmitted after the completion of tracking of one person.

#### 2.3.2.1. Parameter description

Parameter	Value	Description
UTC time	Date and Time(UTC)	UTC of video frame
GUID	Hex numbers	UUID
HorizontalCells	Decimal numbers	Number of cell divisions for the entire camera angle of view (horizontal direction)
VerticalCells	Decimal numbers	Number of cell divisions for the entire camera angle of view (vertical direction)
ActiveCells	Enumeration of zeros and ones	Passed location information of people

#### 2.3.2.2. Meta Stream Example

```

<?xml version="1.0" encoding="utf-8"?>
<tt:MetaDataStream xmlns:tt="http://www.onvif.org/ver10/schema"
  xmlns:wsnt=http://docs.oasis-open.org/wsn/b-2
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <tt:Event>
    <wsnt:NotificationMessage>
      <wsnt:Topic Dialect="http://www.onvif.org/ver10/tev/topicExpression/ConcreteSet"
        xmlns:tnsipro1="http://i-pro.com/2021/onvif/event/topics"
        tns1:RuleEngine/tnsipro1:HumanBestshot
      </wsnt:Topic>
    </wsnt:NotificationMessage>
  </tt:Event>
</tt:MetaDataStream>

```





### 3. Interface commands (CGI): Download the CSV files

#### 3.1. Structure

[Command interface]

Method: GET

[CGI]

· Multi-sensor camera (The example below is in the case of specifying channel 1.)

##### ■AI Face Detection

http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&channel=1&s\_appDataType=9&s\_appData=(base64 data)

##### ■AI People Detection

http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&channel=1&s\_appDataType=9&s\_appData=(base64 data)

· All cameras except for multi-sensor camera

##### ■AI Face Detection

http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\_appDataType=9&s\_appData=(base64 data)

##### ■AI People Detection

http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\_appDataType=9&s\_appData=(base64 data)

CGI URL : http://192.168.0.10/cgi-bin/adam.cgi

Name of API : sendDataToAdamApplication

[Request Parameters]

Parameter	Description
appName	FaceBestshotApp : Specified when sending to AI Face Detection HumanBestshotApp : Specified when sending to AI People Detection
channel	Channel details of multi-sensor camera *Given only to multi-sensor camera
s_appDataType	Data type transmitted.

	Always "9" if this is a CGI used for downloading CSV files
s_appData	Base 64 encoded. Specify how to download the CSV file.

[Contents of s\_appData]

See chapter 3.2.2 for AI Face Detection and chapter 3.3.2 for AI People Detection.

### 3.2. AI Face Detection

AI Face Detection performs feature extraction and gender age estimation for thumbnails determined to be the best shots. Meta information (attribute information) can be saved in csv and obtained by CGI.

The maximum retention period and number of meta information are as follows. Delete old meta information if any of the following limits are exceeded.

- Maximum retention period: 92 days
- Maximum saved number: 50,000

[CGI to enable csv save function]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjF9fQ==](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjF9fQ==)

[CGI to disable csv save function (initial setting)]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjB9fQ==](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjB9fQ==)



### 3.2.1. CSV file format

For meta information, one piece of meta information for a person is saved at the timing of transmission of ONVIF meta information. However, if the same person continues to be detected across the timing of saving the csv file, two pieces of meta information for one person may be saved. See chapter 2.2.1 for information on when to send ONVIF meta information.

The csv file format and meta information contents are described below.

localtime, utctime, timezone, summertime, age, gender, (Detailed information [Table No. 8-17 below].)
localtime, utctime, timezone, summertime, age, gender, (Detailed information [Table No. 8-17 below].)
localtime, utctime, timezone, summertime, age, gender, (Detailed information [Table No. 8-17 below].)
...
localtime, utctime, timezone, summertime, age, gender, (Detailed information [Table No. 8-17 below].)

#### Meta information list

No.	Data	Format	Description
1	localtime	YYYY/MM/ DD HH:mm:SS ss  YYYY : years (4 columns) MM : month(2 columns) DD : day(2 columns) HH : hour(2 columns) mm : minute(2 columns) SS : second(2 columns) ss : millisecond(2 columns in increments of 10 milliseconds)	Year, month, day, hour, minute, second (local time) when meta information is saved  (Ex.) 2011/04/21 00:24:36 01
2	utctime	YYYY/MM/ DD HH:mm:SS ss  YYYY : years (4 columns)	Year, month, day, hour, minute, second (UTC) when meta information is saved

		MM : month(2 columns) DD : day(2 columns) HH : hour(2 columns) mm : minute(2 columns) SS : second(2 columns) ss : millisecond(2 columns in increments of 10 milliseconds)	(Ex.) If localtime= 2011/04/21 0:24:36 01 in Japan, 2011/04/20 15:24:36 01
3	timezone	-12:00~+12:00 (6 columns)	Timezone (e.g.)In case of Japan, +09:00
4	summertime	IN, OUT	Summertime IN: Daylightsaving time (Summertime) OUT: Not daylight saving time
5	age	0~6,255	Age determination result  0 : 0~10 years old 1 : 11~20 years old 2 : 21~30 years old 3 : 31~40 years old 4 : 41~50 years old 5 : 51~60 years old 6 : 61 and over 255 : Undecidable  * When score_mask is 0.2 or more, the accuracy of age identification decreases. Therefore, when score_mask is 0.2 or more, it is recommended not to use age determination results.
6	gender	0, 1, 255	Gender determination result. 0 : Male 1 : Female 255 : Undecidable

7	score_age_0	0.00~1.00	Likelihood of age. The age represented by each parameter name is shown below. score_age_0 : 0~10 years old score_age_1 : 11~20 years old score_age_2 : 21~30 years old score_age_3 : 31~40 years old score_age_4 : 41~50 years old score_age_5 : 51~60 years old score_age_6 : 61 and over  * If the age determination result is not determinable, the value shall be -1.0. (*1)
8	score_age_1		
9	score_age_2		
10	score_age_3		
11	score_age_4		
12	score_age_5		
13	score_age_6		
14	score_male	0.00~1.00	Likelihood of gender  * If the result of gender determination is inconclusive, the value shall be -1.0. (*1)
15	score_female		
16	score_mask	0.00~1.00	Likelihood of whether or not human is wearing a mask.  * If the result of the determination of whether or not a mask is worn is inconclusive, the score shall be -1.0. (*1)

\*1 By sending the following CGI, it is possible to select whether to save all meta information in csv or to discard it when the judgment results of the likelihood of age and gender (data No.7~15) are all null.

[Configuration CGI for saving csv even when all values are -1.0 (default setting)]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFY3N2X21vZGU6MH19](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFY3N2X21vZGU6MH19)

[Configuration CGI for discarding without saving csv when all values are -1.0]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=1&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRfY3N2X21vZGU6MX19](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=1&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRfY3N2X21vZGU6MX19)

#### ■About saving meta information

The storage period of the meta information in the internal memory is one hour. Unsaved meta information will not be retained if the app operation is stopped or the camera is turned off.

### 3.2.2. Getting the CSV file

#### 3.2.2.1. Get storing period (mode:range)

[CGI URL]

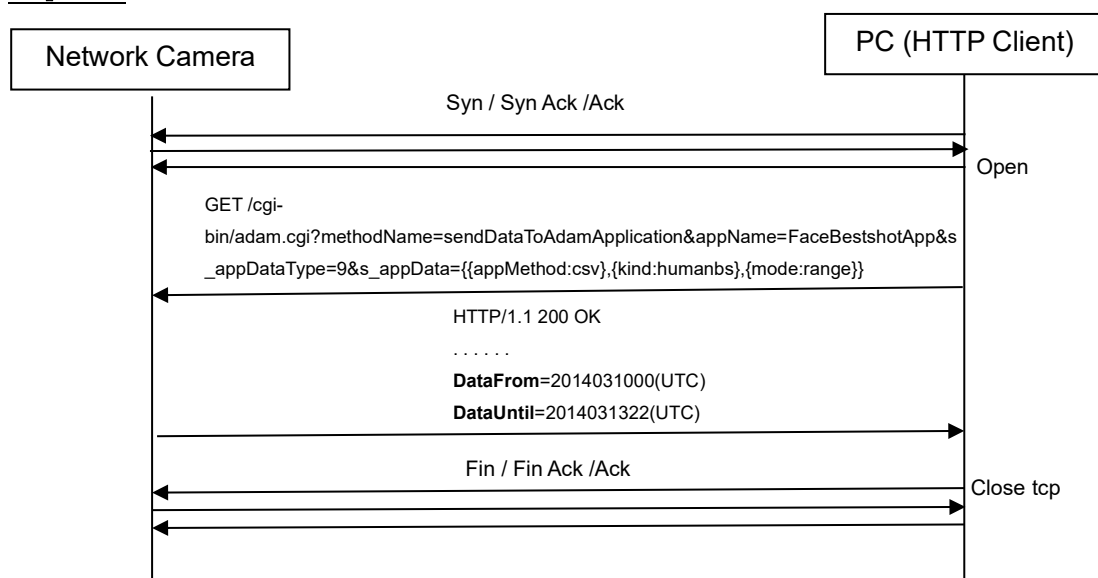
[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:facebs},{mode:range}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:facebs},{mode:range}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

[Request parameters]

Parameter	Value	Description
appMethod	csv	Set the method.
kind	facebs	Kind of the csv data facebs: Meta information of AI Face Detection  *This parameter can't be omitted
mode	range	Kind of response range: Get storing period  *This parameter can't be omitted

#### Sequence



### Response format

```
HTTP1.1 200OK [CR][LF]
Status 200[CR][LF]
....
Content-Length: xxxxx[CR][LF]
DataFrom=YYYYMMDDHHmm(UTC)[CR][LF]
DataUntil= YYYYMMDDHHmm(UTC)[CR][LF]
```

### Response data

Data	Format	Description
DataFrom	YYYYMMDDHHmm(UTC)  YYYY: year(4 columns) MM: month(2 columns) DD: day(2 columns) HH: hour(2 columns) mm: minute(2 columns)	Time and date of the oldest csv file (UTC time)
DataUntil	YYYYMMDDHHmm(UTC)  YYYY: year(4 columns) MM: month(2 columns) DD: day(2 columns) HH: hour(2 columns) mm: minute(2 columns)	Time and date of the latest csv file (UTC time)

The response when there are multiple pieces of meta information is

DataFrom=YYYYMMDDHH(UTC) (time and date of the oldest meta information)

DataUntil=yyyymmddhh(UTC) (time and date of the latest meta information)

to the client as a response to the CGI.

```
HTTP/1.1 200 OK[CR][LF]
Status: 200[CR][LF]
...
...
Content-length: xxxxx[CR][LF]
```

```
DataFrom=2014031000(UTC)[CR][LF]
```

```
DataUntil=2014031322(UTC)[CR][LF]
```

When there is only one piece of meta information, the response is sent to the client as a response to the CGI with DataFrom and DataUntil set to the same date and time.

### 3.2.2.2. Get csv files by a date (mode:multi)

[CGI URL]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:facebs},{mode:multi},{year:YYYY},{month:MM},{date:DD},{hour:HH},{days:d}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:facebs},{mode:multi},{year:YYYY},{month:MM},{date:DD},{hour:HH},{days:d}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

[Request parameters]

Parameter	Value	Description
appMethod	csv	Set the method.
kind	facebs	Kind of the csv data facebs: Meta information of AI Face Detection  *This parameter can't be omitted
mode	multi	Kind of response multi: Get csv/index files by a date.  *This parameter can't be omitted
year	(numerical value) (4 columns)	Date of the file to acquire (Year)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
month	1 - 12	Date of the file to acquire (Month)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
date	1 - 31	Date of the file to acquire (Date)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
hour	0 - 23	The time of file to acquire.  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.



days	1 - 7	The days of the file to acquire  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
------	-------	---

[Command examples]

Getting csv files of 4/11/2023 for one day.

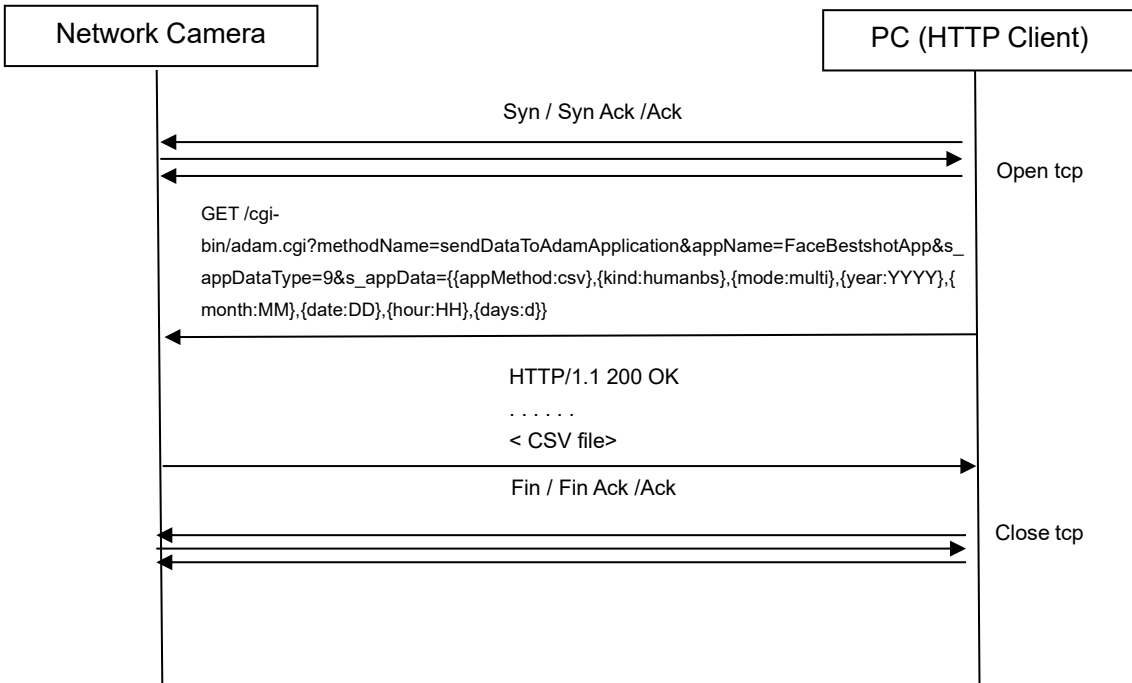
In case of the UTC time difference is +9 hours, specify {date:10},{hour:15} which is 9 hours before 4/11 00:00.

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:facebs},{mode:multi},{year:2014},{month:04},{date:10},{hour:15},{days:1}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=FaceBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:facebs},{mode:multi},{year:2014},{month:04},{date:10},{hour:15},{days:1}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

If meta information exists within the number of days to be acquired from the date specified by CGI, all existing meta information is sent as csv files.

**Sequence**



[csv file name]

face\_bs\_YYYYMMDDHHMM2\_yyyymmddhhmm2.csv

face\_bs\_ : fixed prefix

YYYY :

The year (4 digits) of the oldest meta information

MM :

The month (2 digits) of the oldest meta information

DD :

The day (2 digits) of the oldest meta information

HH :

The hour (2 digits) of the oldest meta information

MM2 :

The minutes (2 digits) of the oldest meta information

yyyy :

The year (4 digits) of the latest meta information

mm :

The month (2 digits) of the latest meta information

dd :

The day (2 digits) of the latest meta information

hh :

The hour (2 digits) of the latest meta information

mm2 :

The minutes (2 digits) of the latest meta information

e.g.) Get csv files for 3 days from 7:00:00 on April 20, 2011.

When the oldest meta information's localtime is April 20, 2011 7:30:00 and the latest meta information's localtime is April 23, 2011 5:00:00, csv file name is

face\_bs \_201104200730\_201104230500.csv

#### Response format

```
HTTP/1.1 200 OK[CR][LF]
Status: 200[CR][LF]
Connection: close[CR][LF]
Content-Disposition:form-
data;name="data"filename="face_bs_YYYYMMDDHH_yyyymmddhh.csv"[CR][LF]
Content-Type: text/plain[CR][LF]
Content-Length: xxxx[CR][LF][CR][LF]
```

(meta data(csv))

### 3.2.2.3. Error response

#### Error response

```
HTTP1.1 200OK [CR][LF]
Status 200[CR][LF]
....
Content-Length: xxxxx[CR][LF]
xxxxxxxxxx[CR][LF]
[CR][LF]
```

Kind of the error	Content of xxxxxxxxxxxx
csv files doesn't exist.	No Data.
Abnormal CGI parameters (Value is out of range, required parameter is not assigned, etc.)	Parameter Error:xxxx  *Give xxxx the parameter name that caused the error

### 3.3. AI People Detection

AI People Detection performs personal attribute estimation processing on the thumbnail determined to be the best shot. Meta information (attribute information) can be saved as csv and acquired by CGI.

The maximum retention period and number of meta information are as follows. Delete old meta information if any of the following limits are exceeded.

- Maximum retention period: 92 days
- Maximum saved number: 50,000

[CGI to enable csv save function]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjF9fQ==](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjF9fQ==)

[CGI to disable csv save function (initial setting)]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjB9fQ==](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3NhdmluZ19jc3ZfZW5hYmxlOjB9fQ==)

### 3.3.1. CSV file format

One meta information of the person is saved at the timing of transmission of ONVIF meta information. However, if the same person continues to be detected across the save timing of the csv file, two pieces of meta information for one person may be saved. See section 2.2.2 for ONVIF meta information transmission timing.

When the maximum retention period or the maximum number of stored items is exceeded, the oldest meta information is deleted.

The csv file format and meta information content are described below.

localtime, utctime, timezone, summertime, age, gender, [No.7 to 55 in the table below]
localtime, utctime, timezone, summertime, age, gender, [No.7 to 55 in the table below]
localtime, utctime, timezone, summertime, age, gender, [No.7 to 55 in the table below]
...
localtime, utctime, timezone, summertime, age, gender, [No.7 to 55 in the table below]

#### Meta information list

No.	Data	Format	Description
1	localtime	YYYY/MM/ DD HH:mm:SS ss  YYYY : years (4 columns) MM : month(2 columns) DD : day(2 columns) HH : hour(2 columns) mm : minute(2 columns) SS : second(2 columns) ss : millisecond (2 columns in increments of 10 milliseconds)	Year, month, day, hour, minute, second (local time) when meta information is saved  (Ex.) 2011/04/21 00:24:36 01
2	utctime	YYYY/MM/ DD HH:mm:SS ss  YYYY : years (4 columns) MM : month(2 columns) DD : day(2 columns) HH : hour(2 columns)	Year, month, day, hour, minute, second (UTC) when meta information is saved  (Ex.) If localtime= 2011/04/21 0:24:36 01 in Japan,

		mm : minute(2 columns) SS : second(2 columns) ss : millisecond (2 columns in increments of 10 milliseconds)	2011/04/20 15:24:36 01
3	timezone	-12:00~+12:00 (6 columns)	Timezone (e.g.)In case of Japan, +09:00
4	summertime	IN, OUT	Summertime IN: Daylightsaving time (Summertime) OUT: Not daylight saving time
5	age	0~6,255	Age determination result  0 : 0~10 years old 1 : 11~20 years old 2 : 21~30 years old 3 : 31~40 years old 4 : 41~50 years old 5 : 51~60 years old 6 : 61 and over 255 : Undecidable  * When score_mask is 0.2 or more, the accuracy of age identification decreases. Therefore, when score_mask is 0.2 or more, it is recommended not to use age determination results.
6	gender	0, 1, 255	Gender determination result. 0 : Male 1 : Female 255 : Undecidable
7	score_age_0	0.00~1.00	Likelihood of age.
8	score_age_1		The age represented by each
9	score_age_2		parameter name is shown below.

10	score_age_3		<p>score_age_0 : 0~10 years old  score_age_1 : 11~20 years old  score_age_2 : 21~30 years old  score_age_3 : 31~40 years old  score_age_4 : 41~50 years old  score_age_5 : 51~60 years old  score_age_6 : 61 and over</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
11	score_age_4		
12	score_age_5		
13	score_age_6		
14	score_male	0.00~1.00	<p>Likelihood of gender</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
15	score_female		
16	score_hair_long	0.00~1.00	<p>Likelihood of hairstyle</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
17	score_hair_short		
18	score_hair_hat		
19	score_hair_color_black	0.00~1.00	<p>Likelihood of hair color</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
20	score_hair_color_brown		
21	score_hair_color_white		
22	score_hair_color_gray		
23	score_hair_color_gold		
24	score_beard	0.00~1.00	

25	score_nobeard		<p>Likelihood of whether or not human has a beard.</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
26	score_sunglass	0.00~1.00	<p>Likelihood of whether or not human is wearing sunglasses.</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
27	score_noglass		
28	score_mask	0.00~1.00	<p>Likelihood of whether or not human is wearing a mask.</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
29	score_nomask		
30	score_tops_longsl eeve	0.00~1.00	<p>Likelihood of type of tops</p> <p>score_tops_long sleeve : Long score_tops_short sleeve : Short</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
31	score_tops_short leeve		
32	score_tops_color_ black	0.00~1.00	<p>Likelihood of color of tops</p> <p>* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)</p>
33	score_tops_color_ brown		
34	score_tops_color_ white		

35	score_tops_color_gray		
36	score_tops_color_green		
37	score_tops_color_red		
38	score_tops_color_blue		
39	score_tops_color_yellow		
40	score_tops_color_orange		
41	score_tops_color_purple		
42	score_tops_color_pink		
43	score_bottoms_trousers	0.00~1.00	Likelihood of type of bottoms score_bottoms_trousers : Long score_bottoms_shorts : Short  * If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)
44	score_bottoms_shorts		
45	score_bottoms_color_black	0.00~1.00	Likelihood of color of bottoms * If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)
46	score_bottoms_color_brown		
47	score_bottoms_color_white		
48	score_bottoms_color_gray		
49	score_bottoms_color_green		



50	score_bottoms_color_red		
51	score_bottoms_color_blue		
52	score_bottoms_color_yellow		
53	score_bottoms_color_orange		
54	score_bottoms_color_purple		
55	score_bottoms_color_pink		
56	score_shoes_color_black	0.00~1.00	Likelihood of color of shoes * If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)
57	score_shoes_color_brown		
58	score_shoes_color_white		
59	score_shoes_color_green		
60	score_shoes_color_red		
61	score_shoes_color_blue		
62	score_shoes_color_yellow		
63	score_bag	0.00~1.00	Likelihood of whether or not human has a bag * If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)
64	score_nobag		
65	score_bag_color_black	0.00~1.00	Likelihood of color of bag

66	score_bag_color_brown	* If the score of the judgment result is less than or equal to “Attribute information transmission threshold (bestshot transmission)”, the score shall be -1.0. (*1)
67	score_bag_color_white	
68	score_bag_color_green	
69	score_bag_color_red	
70	score_bag_color_blue	
71	score_bag_color_yellow	
72	score_bag_color_orange	
73	score_bag_color_purple	
74	score_bag_color_pink	

\*1 By sending the following CGI, it is possible to select whether to save all meta information in csv or to discard it when the judgment results of the likelihood of age and gender (data No.7~15) are all null.

[Configuration CGI for saving csv even when all values are -1.0 (default setting)]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFy3N2X21vZGU6MH19](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFy3N2X21vZGU6MH19)

[Configuration CGI for discarding without saving csv when all values are -1.0]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=2&s\\_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFy3N2X21vZGU6MX19](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=2&s_appData=e3thcHBNZXRob2Q6UE9TVH0se3Vuc2F2ZWRFy3N2X21vZGU6MX19)

■About saving meta information

The storage period of the meta information in the internal memory is one hour. Unsaved meta information will not be retained if the app operation is stopped or the camera is turned off.

### 3.3.2. Getting the CSV file

#### 3.3.2.1. Get storing period (mode:range)

[CGI URL]

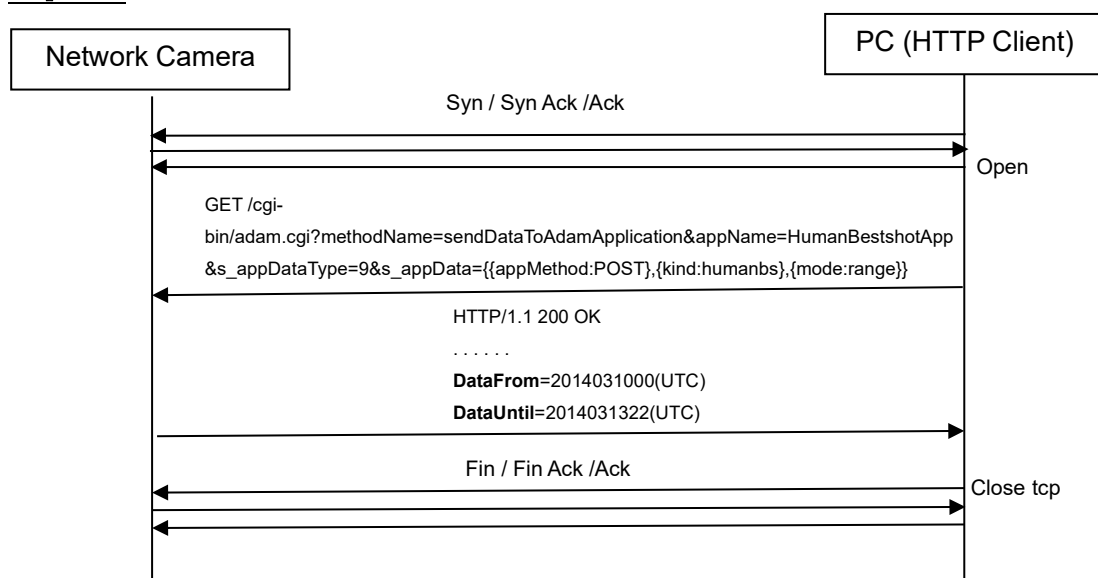
[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:humanbs},{mode:range}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:humanbs},{mode:range}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

[Request parameters]

Parameter	Value	Description
appMethod	csv	Set the method.
kind	humanbs	Kind of the csv data humanbs: Meta information of AI People Detection  *This parameter can't be omitted
mode	range	Kind of response range: Get storing period  *This parameter can't be omitted

#### Sequence



### Response format

```
HTTP1.1 200OK [CR][LF]
Status 200[CR][LF]
....
Content-Length: xxxxx[CR][LF]
DataFrom=YYYYMMDDHHmm(UTC)[CR][LF]
DataUntil= YYYYMMDDHHmm(UTC)[CR][LF]
```

### Response data

Data	Format	Description
DataFrom	YYYYMMDDHHmm(UTC)  YYYY: year(4 columns) MM: month(2 columns) DD: day(2 columns) HH: hour(2 columns) mm: minute(2 columns)	Time and date of the oldest csv file (UTC time)
DataUntil	YYYYMMDDHHmm(UTC)  YYYY: year(4 columns) MM: month(2 columns) DD: day(2 columns) HH: hour(2 columns) mm: minute(2 columns)	Time and date of the latest csv file (UTC time)

The response when there are multiple pieces of meta information is

DataFrom=YYYYMMDDHH(UTC) (time and date of the oldest meta information)

DataUntil=yyyymmddhh(UTC) (time and date of the latest meta information)

to the client as a response to the CGI.

```
HTTP/1.1 200 OK[CR][LF]
Status: 200[CR][LF]
...
...
Content-length: xxxxx[CR][LF]
```

```
DataFrom=2014031000(UTC)[CR][LF]
```

```
DataUntil=2014031322(UTC)[CR][LF]
```

When there is only one piece of meta information, the response is sent to the client as a response to the CGI with DataFrom and DataUntil set to the same date and time.

### 3.3.2.2. Get csv files by a date (mode:multi)

[CGI URL]

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:humanbs},{mode:multi},{year:YYYY},{month:MM},{date:DD},{hour:HH},{days:d}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:humanbs},{mode:multi},{year:YYYY},{month:MM},{date:DD},{hour:HH},{days:d}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

[Request parameters]

Parameter	Value	Description
appMethod	csv	Set the method.
kind	humanbs	Kind of the csv data humanbs: Meta information of AI People Detection  *This parameter can't be omitted
mode	multi	Kind of response multi: Get csv/index files by a date.  *This parameter can't be omitted
year	(numerical value) (4 columns)	Date of the file to acquire (Year)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
month	1 - 12	Date of the file to acquire (Month)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
date	1 - 31	Date of the file to acquire (Date)  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
hour	0 - 23	The time of file to acquire.  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.

days	1 - 7	The days of the file to acquire  *This parameter can't be omitted when the 'mode' parameter set to 'multi'.
------	-------	---

[Command examples]

Getting csv files of 4/11/2023 for one day.

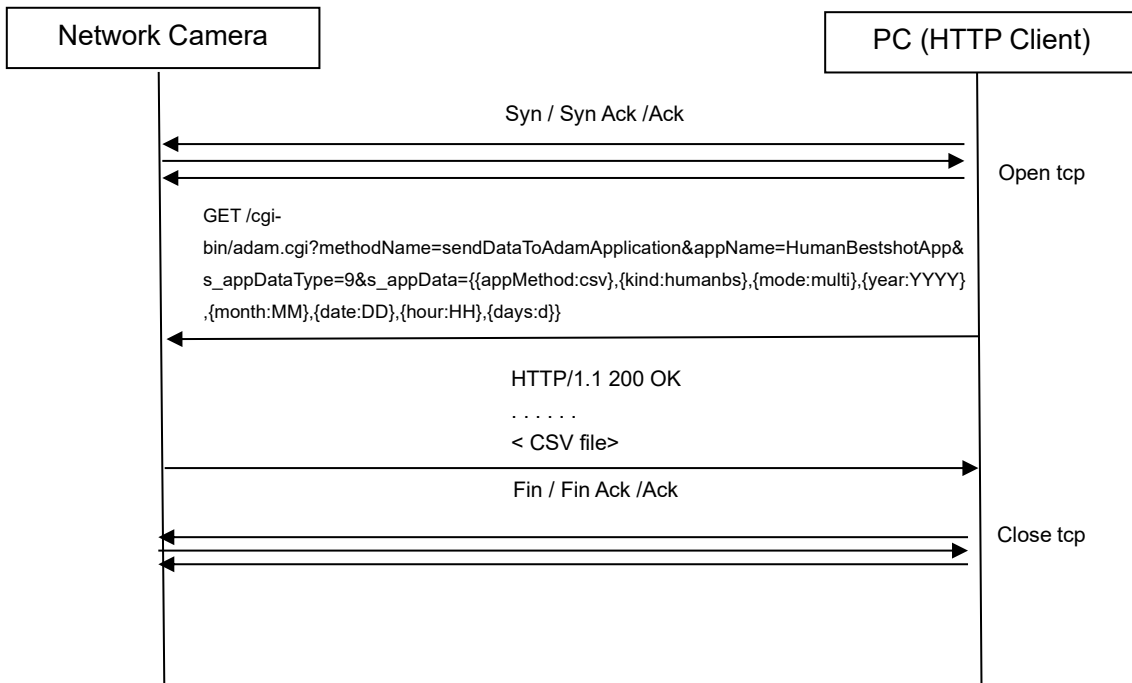
In case of the UTC time difference is +9 hours, specify {date:10},{hour:15} which is 9 hours before 4/11 00:00.

[http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s\\_appDataType=9&s\\_appData={{appMethod:csv},{kind:humanbs},{mode:multi},{year:2023},{month:04},{date:10},{hour:15},{days:1}}](http://192.168.0.10/cgi-bin/adam.cgi?methodName=sendDataToAdamApplication&appName=HumanBestshotApp&s_appDataType=9&s_appData={{appMethod:csv},{kind:humanbs},{mode:multi},{year:2023},{month:04},{date:10},{hour:15},{days:1}})

\*Apply base 64 encode to the preference value that follows "s\_appData=".

If meta information exists within the number of days to be acquired from the date specified by CGI, all existing meta information is sent as csv files.

### Sequence



[csv file name]

human\_bs\_YYYYMMDDHHMM2\_yyyymmddhhmm2.csv



human\_bs\_ : fixed prefix

YYYY :

The year (4 digits) of the oldest meta information

MM :

The month (2 digits) of the oldest meta information

DD :

The day (2 digits) of the oldest meta information

HH :

The hour (2 digits) of the oldest meta information

MM2 :

The minutes (2 digits) of the oldest meta information

yyyy :

The year (4 digits) of the latest meta information

mm :

The month (2 digits) of the latest meta information

dd :

The day (2 digits) of the latest meta information

hh :

The hour (2 digits) of the latest meta information

mm2 :

The minutes (2 digits) of the latest meta information

e.g.) Get csv files for 3 days from 7:00:00 on April 20, 2011.

When the oldest meta information's localtime is April 20, 2011 7:30:00 and the latest meta information's localtime is April 23, 2011 5:00:00, csv file name is

human\_bs\_201104200730\_201104230500.csv

#### Response format

```
HTTP/1.1 200 OK[CR][LF]
Status: 200[CR][LF]
Connection: close[CR][LF]
Content-Disposition:form-
data;name="data"filename="human_bs_YYYYMMDDHH_yyyymmddhh.csv"[CR][LF]
Content-Type: text/plain[CR][LF]
Content-Length: xxxx[CR][LF][CR][LF]
```

(meta data(csv))

### 3.3.2.3. Error response

#### Error response

```
HTTP1.1 200OK [CR][LF]
Status 200[CR][LF]
....
Content-Length: xxxxx[CR][LF]
xxxxxxxxxx[CR][LF]
[CR][LF]
```

Kind of the error	Content of xxxxxxxxxxx
csv files doesn't exist.	No Data.
Abnormal CGI parameters (Value is out of range, required parameter is not assigned, etc.)	Parameter Error:xxxx  *Give xxxx the parameter name that caused the error

## 4. TCP alarm notification

Refer to the document below to learn about TCP alarm notification.

Command interface iPRO\_H.265models\_verx.xx.pdf

7.11. Panasonic Alarm Protocol(TCP notification)

### 4.1. AI People Detection

The alarm notification is transmitted in the form of message ID listed below.

Message name	Extension area		
	Category	Message ID	Message(ASCII)
HUMAN ATTRIBUTE MATCH (Watchlist1)	0x01	0x76	HUMAN ATTRIBUTE MATCH 01 (*1)
HUMAN ATTRIBUTE MATCH (Watchlist2)	0x01	0x77	HUMAN ATTRIBUTE MATCH 02 (*1)
HUMAN ATTRIBUTE MATCH	0x01	0x78	HUMAN ATTRIBUTE MATCH 03 (*1)

(Watchlist3)			
HUMAN ATTRIBUTE MATCH (Watchlist4)	0x01	0x79	HUMAN ATTRIBUTE MATCH 04 (*1)

\*1 Message can be changed to a string specified in the “Alarm message” settings.

#### 4.2. AI Vehicle Detection

The alarm notification is transmitted in the form of message ID listed below.

Message name	Extension area		
	Category	Message ID	Message(ASCII)
VEHICLE ATTRIBUTE MATCH (Watchlist1)	0x01	0x82	VEHICLE ATTRIBUTE MATCH 01 (*1)
VEHICLE ATTRIBUTE MATCH (Watchlist2)	0x01	0x83	VEHICLE ATTRIBUTE MATCH 02 (*1)
VEHICLE ATTRIBUTE MATCH (Watchlist3)	0x01	0x84	VEHICLE ATTRIBUTE MATCH 03 (*1)
VEHICLE ATTRIBUTE MATCH (Watchlist4)	0x01	0x85	VEHICLE ATTRIBUTE MATCH 04 (*1)

\*1 Message can be changed to a string specified in the “Alarm message” settings.

## 5. HTTP alarm notification

Refer to the document below to learn about HTTP alarm notification.

Command interface iPRO\_H.265models\_verx.xx.pdf

7.12. HTTP alarm notification

### 5.1. AI People Detection

The HTTP alarm notification is transmitted in the form of alternative characters as follows.

Alternative characters within MHttpRequest# parameter	Value
%almsrc	41
%almsrc2	Watchlist alarm Watchlist1 : 76 Watchlist2 : 77 Watchlist3 : 78 Watchlist4 : 79

### 5.2. AI Vehicle Detection

The HTTP alarm notification is transmitted in the form of alternative characters as follows.

Alternative characters within MHttpRequest# parameter	Value
%almsrc	41
%almsrc2	Watchlist alarm Watchlist1 : 82 Watchlist2 : 83 Watchlist3 : 84 Watchlist4 : 85

## 6. Appendix

### 6.1. How to use Meta Data Stream

This product sends meta information by making a request with the following two types of RTSP URLs. In either request, the product sends meta information in the same format.

- (1) i-PRO Original Stream
- (2) ONVIF RTSP Stream

The transmission sequence for each request is described below.

#### (1) i-PRO Original Stream

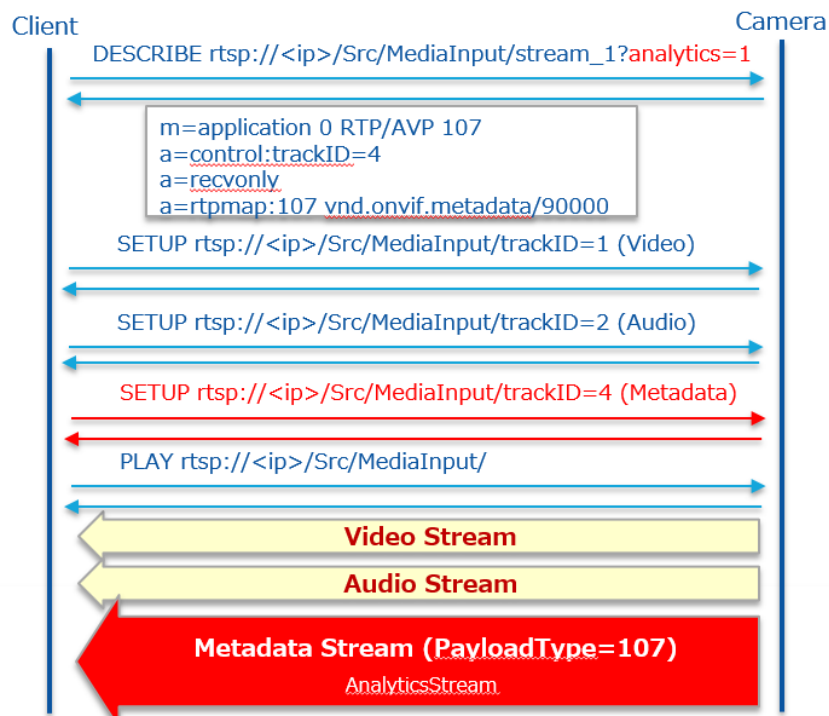
\*The RTSP URL is i-PRO's own RTSP URL.

\*Send “analytics=1” when requesting (RTSP URL ) Analytics Stream. In the case of a multi-sensor camera, the channel number of the camera receiving the meta information is specified.

Example: To receive meta information on channel number 4, specify the following.

```
rtsp://<ip>/Src/MediaInput/stream_1/ch_4?analytics=4
```

\*Send “event=1” or “analytics=1&event=1” respectively when requesting (RTSP URL ) Analytics Stream, Event Stream, or both. In the case of a multi-sensor camera, send a request with “event=1” regardless of which camera receives the meta information.

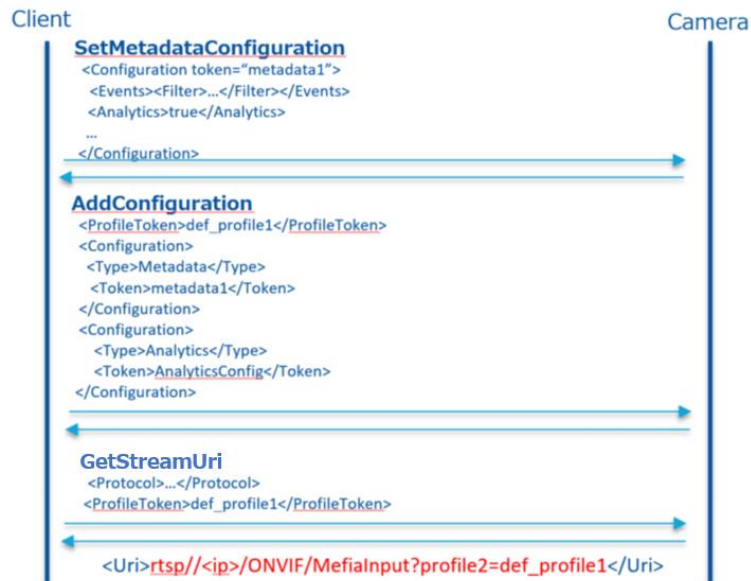


## (2) ONVIF RTSP Stream

\* Configure by ONVIF commands

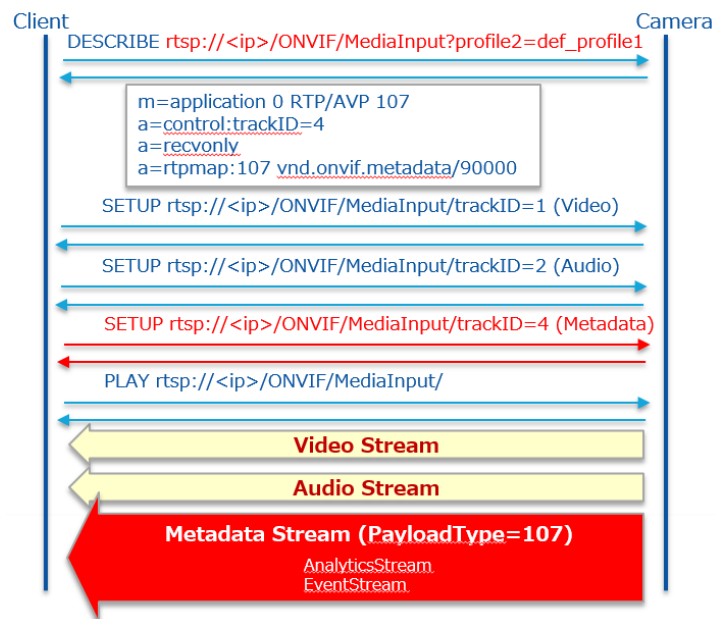
- SetMetadataConfiguration(Event filter, analytics flag)
- AddConfiguration(Add "metadata1" and "AnalyticsConfig" at "MediaProfile")

\* Get RTSP URL by ONVIF commands(GetStreamUri)



\* Streaming by URL got by ONVIF commands

- Event stream is also sent by streaming analytics



See the document "i-PRO\_ApplicationNote\_ONVIF.pdf" for details.