

AI Camera SUNAPI Integration Document

Introduction

This camera supports 2 channels,

Channel1: Actual channel

Channel2: Virtual channel (DPTZ channel)

In BOX models

Channel1: External PTZ

Channel2: Virtual channel (DPTZ)

In Box Models, two ptz modes are supported external and digital ptz, but only one can work at a time. You can refer to BOX MODEL section on selection of modes.

Events and Imaging service is supported only in first channel and in second channel it's not supported.

BOX MODEL (PTZ Feature)

In this model since the PTZ mode selection is global instead of channel level.

New attribute is added to differentiate this behavior,

Under PTZ/Support section of attributes

```
<attribute accesslevel="suser" value="True" type="bool" name="GlobalPTZMode"/>
```

If PTZMode submenu is supported in cgi section, we can use that to select the PTZ mode,

Following two modes are supported,

```
<entry value="ExternalPTZ"/>
```

```
<entry value="DigitalPTZ"/>
```

SET OPERATION:

<http://192.168.75.137/stw-cgi/ptzconfig.cgi?msubmenu=ptzmode&action=set&Mode=ExternalPTZ&Channel=0>

since the mode change is global, client can use any channel number.

VIEW Operation:

<http://192.168.75.137/stw-cgi/ptzconfig.cgi?msubmenu=ptzmode&action=view>

Response:

```
{
  "PtzMode": [
    {
      "Channel": 0,
      "Mode": "ExternalPTZ"
    },
    {
      "Channel": 1,
      "Mode": "ExternalPTZ"
    }
  ]
}
```

Once the mode is updated, camera would reboot and attributes would be updated accordingly. If DigitalPTZ is selected only DigitalPTZ related attributes would be provided and vice versa.

IVA Object Type Filter:

Note: If the filter values are not passed it would work as before. If filter is set, only when the set object type crosses the line or enters the area, event will be triggered.

Line Rule:

SET OPERATION:

<http://192.168.75.137/stw-cgi/eventsources.cgi?msubmenu=videoanalysis2&action=set&Channel=0&Line.1.Coordinate=612,334,1815,1434&Line.1.Mode=Right&DetectionType=MDAndIV&Line.1.ObjectTypeFilter=Vehicle,Person&Line.1.RuleName=boundaryrule1>

view:

```
{
```

```

"VideoAnalysis": [
  {
    "Channel": 0,
    "DetectionType": "MDAndIV",
    "SensitivityLevel": 100,
    "ObjectSizeByDetectionTypes": [
      {
        "DetectionType": "MotionDetection",
        "MinimumObjectSize": "0,0",
        "MaximumObjectSize": "99,99",
        "MinimumObjectSizeInPixels": "42,42",
        "MaximumObjectSizeInPixels": "2560,1920",
        "DetectionResultOverlay": false
      },
      {
        "DetectionType": "IntelligentVideo",
        "MinimumObjectSize": "5,7",
        "MaximumObjectSize": "66,89",
        "MinimumObjectSizeInPixels": "173,173",
        "MaximumObjectSizeInPixels": "1728,1728",
        "DetectionResultOverlay": false
      }
    ],
    "ROIs": [
      {
        "ROI": 1,
        "Mode": "Inside",
        "SensitivityLevel": 1,
        "ThresholdLevel": 5,
        "Coordinates": [
          {
            "x": 0,
            "y": 0
          },
          {
            "x": 0,
            "y": 1919
          },
          {
            "x": 2559,
            "y": 1919
          },
          {
            "x": 2559,
            "y": 0
          }
        ],
        "HandoverIndex": 0,
        "Duration": 0
      }
    ],
    "Lines": [
      {

```

```

    "Line": 1,
    "Coordinates": [
      {
        "x": 612,
        "y": 334
      },
      {
        "x": 1815,
        "y": 1434
      }
    ],
    "Mode": "Right",
    "HandoverIndex": 0,
    "RuleName": "boundaryrule1",
    "ObjectTypeFilter": [" Vehicle ", " Person "]
  }
],
"DefinedAreas": [
  {
    "DefinedArea": 1,
    "Type": "Inside",
    "Mode": [],
    "Coordinates": [
      {
        "x": 1343,
        "y": 548
      },
      {
        "x": 1176,
        "y": 932
      },
      {
        "x": 1667,
        "y": 1468
      },
      {
        "x": 1843,
        "y": 448
      }
    ],
    "AppearanceDuration": 10,
    "LoiteringDuration": 10,
    "HandoverIndex": 0,
    "IntrusionDuration": 0
  }
]
}

```

Area Rule:

Set operation:

<http://192.168.75.137/stw-cgi/eventsources.cgi?msubmenu=videoanalysis2&action=set&Channel=0&DefinedArea.1.Coordinate=488,638,1971,282,2335,998,1839,1618&DefinedArea.1.Type=Inside&DefinedArea.1.Mode=AppearDisappear,Entering,Exiting,Intrusion,Loitering&DefinedArea.1.AppearanceDuration=10&DefinedArea.1.LoiteringDuration=10&DefinedArea.1.IntrusionDuration=0&DefinedArea.1.ObjectTypeFilter=Vehicle,Person&DetectionType=MDAndIV&DefinedArea.1.RuleName=boundbox1>

View:

```
{
  "VideoAnalysis": [
    {
      "Channel": 0,
      "DetectionType": "MDAndIV",
      "SensitivityLevel": 100,
      "ObjectSizeByDetectionTypes": [
        {
          "DetectionType": "MotionDetection",
          "MinimumObjectSize": "0,0",
          "MaximumObjectSize": "99,99",
          "MinimumObjectSizeInPixels": "42,42",
          "MaximumObjectSizeInPixels": "2560,1920",
          "DetectionResultOverlay": false
        },
        {
          "DetectionType": "IntelligentVideo",
          "MinimumObjectSize": "5,7",
          "MaximumObjectSize": "66,89",
          "MinimumObjectSizeInPixels": "173,173",
          "MaximumObjectSizeInPixels": "1728,1728",
          "DetectionResultOverlay": false
        }
      ]
    },
    {
      "ROIs": [
        {
          "ROI": 1,
          "Mode": "Inside",
          "SensitivityLevel": 1,
          "ThresholdLevel": 5,
          "Coordinates": [
            {
              "x": 0,
              "y": 0
            },
            {
              "x": 0,
              "y": 1919
            }
          ]
        }
      ]
    }
  ]
}
```

```
{
  "x": 2559,
  "y": 1919
},
{
  "x": 2559,
  "y": 0
}
],
"HandoverIndex": 0,
"Duration": 0
}
],
"Lines": [
  {
    "Line": 1,
    "Coordinates": [
      {
        "x": 612,
        "y": 334
      },
      {
        "x": 1815,
        "y": 1434
      }
    ],
    "Mode": "Right",
    "HandoverIndex": 0
  }
],
"DefinedAreas": [
  {
    "DefinedArea": 1,
    "Type": "Inside",
    "Mode": [
      "AppearDisappear",
      "Entering",
      "Exiting",
      "Intrusion",
      "Loitering"
    ],
    "Coordinates": [
      {
        "x": 488,
        "y": 638
      },
      {
        "x": 1971,
        "y": 282
      },
      {
        "x": 2335,
        "y": 998
      }
    ]
  }
]
```

```

    },
    {
      "x": 1839,
      "y": 1618
    }
  ],
  "AppearanceDuration": 10,
  "LoiteringDuration": 10,
  "HandoverIndex": 0,
  "IntrusionDuration": 0,
  "RuleName": " boundbox1 ",
  "ObjectTypeFilter": [" Vehicle ", " Person "]
}
]
}
]
}

```

Object Detection Submenu:

Note: Only when Object detection or IVA is enabled object metadata would be generated.

In ObjectDetection submenu, if no object types are selected, no event would be generated and it would generate only metadata.

Set Operation:

<http://192.168.75.52/stw-cgi/eventsources.cgi?msubmenu=objectdetection&action=set&Channel=0&ObjectTypes=Vehicle,Person,Face,LicensePlate&Sensitivity=50&Enable=True&ExcludeArea.1.Coordinate=672,1002,1044,254,2291,326,2275,1662>

View operation:

<http://192.168.75.52/stw-cgi/eventsources.cgi?msubmenu=objectdetection&action=view>

```
{
  "ObjectDetection": [
    {
      "Channel": 0,
      "Enable": true,
      "Duration": 1,
      "Sensitivity": 80,
      "MinimumObjectSize": "4,7",
      "MaximumObjectSize": "50,89",
      "MinimumObjectSizeInPixels": "194,194",
      "MaximumObjectSizeInPixels": "1944,1944",
      "ObjectTypes": [
        "Person",
        "Vehicle",
        "Face",
        "LicensePlate"
      ],
      "ExcludeAreas": [
        {
          "ExcludeArea": 1,
          "Coordinates": [
            {
              "x": 1248,
              "y": 502
            },
            {
              "x": 3173,
              "y": 502
            },
            {
              "x": 3317,
              "y": 1743
            },
            {
              "x": 972,
              "y": 1701
            }
          ]
        }
      ]
    }
  ]
}
```


MaskDetection Submenu

When this submenu is configured, camera would generate mask detection event, both in sunapi eventstatus and onvif eventservice.

VIEW OPERATION:

<http://192.168.71.167/stw-cgi/eventsources.cgi?msubmenu=maskdetection&action=view>

RESPONSE:

```
{
  "MaskDetection": [
    {
      "Channel": 0,
      "Enable": true,
      "DetectionMode": "MASK",
      "Duration": 2,
      "Sensitivity": 80,
      "MinimumObjectSize": "5,8",
      "MaximumObjectSize": "50,89",
      "MinimumObjectSizeInPixels": "194,194",
      "MaximumObjectSizeInPixels": "1944,1944",
      "EnableMetadataInExcludeArea": false,
      "ExcludeAreas": [
        {
          "ExcludeArea": 1,
          "Coordinates": [
            {
              "x": 714,
              "y": 424
            },
            {
              "x": 714,
              "y": 1767
            },
            {
              "x": 2615,
              "y": 1767
            },
            {
              "x": 2615,
              "y": 424
            }
          ]
        }
      ]
    }
  ]
}
```

SET OPERATION:

<http://192.168.71.167/stw-cgi/eventsources.cgi?msubmenu=maskdetection&action=set&Channel=0&Enable=True&ExcludeArea.1.Coordinate=714,426,714,1769,2615,1769,2615,426&Sensitivity=50>

Metaimagetransfer submenu: (BestShot Feature)

Used to enable the image sending feature in metadata

Note: Object detection should be enabled for this functionality to work

View the current settings:

<http://IP/eventsources.cgi?msubmenu=metaimagetransfer&action=view>

```
{  
  " MetaImageTransfer " :[  
    {  
      " Channel " :0,  
      " ObjectTypes": [" Vehicle ", " Person ", " Face ", " LicensePlate "],  
    }  
  ]  
}
```

Set operation:

<http://IP/eventsources.cgi?msubmenu=metaimagetransfer&action=set&Channel=0&ObjectTypes=Face,LicensePlate>

Digital Auto Tracking:

For setting the digital autotracking filter setting based on object types

Note: Only channel 1 support this feature (Which is DPTZ channel)

VIEW:

<http://192.168.75.137/stw-cgi/ptzconfig.cgi?msubmenu=digitalautotracking&action=view>

```
{
  "digitalautotracking": [
    {
      "Channel": 1,
      "ObjectTypeFilter": [
        "Person",
        "Vehicle"
      ]
    }
  ]
}
```

SET:

<http://192.168.75.137/stw-cgi/ptzconfig.cgi?msubmenu=digitalautotracking&action=set&Channel=1&ObjectTypeFilter=Person,Vehicle>

EventStatus Check:

Both (Object Detection and Mask Detection events)

<http://192.168.75.52/stw-cgi/eventstatus.cgi?msubmenu=eventstatus&action=check>

```
AlarmInput.1=False
AlarmOutput.1=False
Channel.0.MotionDetection=False
Channel.0.MotionDetection.RegionID.1=False
Channel.0.FaceDetection=False
Channel.0.Tampering=False
Channel.0.AudioDetection=False
Channel.0.DefocusDetection=False
Channel.0.FogDetection=False
```

Channel.0.Profile.1.DigitalAutoTracking=False
Channel.0.Profile.2.DigitalAutoTracking=False
Channel.0.Profile.3.DigitalAutoTracking=False
Channel.0.Profile.4.DigitalAutoTracking=False
Channel.0.Profile.5.DigitalAutoTracking=False
Channel.0.Profile.6.DigitalAutoTracking=False
Channel.0.Profile.7.DigitalAutoTracking=False
Channel.0.Profile.8.DigitalAutoTracking=False
Channel.0.Profile.9.DigitalAutoTracking=False
Channel.0.Profile.10.DigitalAutoTracking=False
Channel.0.VideoAnalytics.Passing=False
Channel.0.VideoAnalytics.Intrusion=False
Channel.0.VideoAnalytics.Exiting=False
Channel.0.VideoAnalytics.Appearing=True
Channel.0.VideoAnalytics.Loitering=False
Channel.0.AudioAnalytics.Scream=False
Channel.0.AudioAnalytics.Gunshot=False
Channel.0.AudioAnalytics.Explosion=False
Channel.0.AudioAnalytics.GlassBreak=False
Channel.0.ObjectDetection=False
Channel.0.ObjectDetection.Person=False
Channel.0.ObjectDetection.Vehicle=False
Channel.0.ObjectDetection.Face=False
Channel.0.ObjectDetection.LicensePlate=False
Channel.0.MaskDetection=False
Channel.0.Connected=True
SystemEvent.TimeChange=False
SystemEvent.PowerReboot=False
SystemEvent.FWUpdate=False
SystemEvent.FactoryReset=False
SystemEvent.ConfigurationBackup=False
SystemEvent.ConfigurationRestore=False
SystemEvent.ConfigChange=False
SystemEvent.SDFormat=False
SystemEvent.SDFail=False
SystemEvent.SDFull=False
SystemEvent.SDInsert=False
SystemEvent.SDRemove=True
SystemEvent.NASConnect=False
SystemEvent.NASDisconnect=True
SystemEvent.NASFail=False
SystemEvent.NASFull=False
SystemEvent.NASFormat=False

SchemaBased Dynamic Event format

Check:

<http://192.168.71.167/stw-cgi/eventstatus.cgi?submenu=eventstatus&action=check&SchemaBased=True>

Monitor:

<http://192.168.71.167/stw-cgi/eventstatus.cgi?msubmenu=eventstatus&action=monitor&SchemaBased=True>

Monitordiff:

<http://192.168.71.167/stw-cgi/eventstatus.cgi?msubmenu=eventstatus&action=monitordiff&SchemaBased=True>

```
{
  "EventName": "ObjectDetection",
  "Time": "2019-06-16T00:22:46.802+00:00",
  "Source": {
    "Channel": 0
  },
  "Data": {
    "State": true,
    "ObjectTypes": "Face, Vehicle"
  }
}
```

```
{
  "EventName": "MaskDetection",
  "Time": "2020-06-26T18:35:09.452+00:00",
  "Source": {
    "Channel": 0
  },
  "Data": {
    "State": false,
    "ObjectID": 0
  }
}
```

ONVIF/MetaEvent notification: (Based on ONVIF Draft)

```
<tt:Event>
  <wsnt:NotificationMessage>
    <wsnt:Topic
Dialect="http://www.onvif.org/ver10/tev/topicExpression/ConcreteSet">tns1:RuleEngine/ObjectDetection/Object<
/wsnt:Topic>
    <wsnt:Message>
      <tt:Message UtcTime="2019-11-14T05:50:51.290Z" PropertyOperation="Changed">
        <tt:Source>
```

```

        <tt:SimpleItem Name="VideoSource" Value="VideoSourceToken-0"/>
        <tt:SimpleItem Name="RuleName" Value="ObjectDetectionRule-1"/>
    </tt:Source>
    <tt:Data>
        <tt:SimpleItem Name="ClassTypes" Value="Person Vehicle"/>
    </tt:Data>
</tt:Message>
</wsnt:Message>
</wsnt:NotificationMessage>
</tt:Event>

```

```

<wsnt:NotificationMessage xmlns:wsnt="http://docs.oasis-open.org/wsn/b-2">
    <wsnt:Topic Dialect="http://www.onvif.org/ver10/tev/topicExpression/ConcreteSet
xmlns:wsnt=http://docs.oasis-open.org/wsn/b-2
xmlns:tns1=http://www.onvif.org/ver10/topics">tns1:RuleEngine/Detection/Mask</wsnt:Topic>
    <wsnt:Message>
        <tt:Message UtcTime="2020-07-14T15:54:44Z" xmlns:tt="https://www.onvif.org/ver10/schema/">
            <tt:Source>
                <tt:SimpleItem Name="VideoSourceToken" Value="VideoSouceTok1"/>
                <tt:SimpleItem Name="RuleName" Value="MaskDetectionRule1"/>
            </tt:Source>
            <tt:Data>
                <tt:SimpleItem Name="State" Value="true"/>
                <tt:SimpleItem Name="ObjectID" Value="100023"/>
            </tt:Data>
        </tt:Message>
    </wsnt:Message>
</wsnt:NotificationMessage>

```

Note: Whenever there is change in detection types ClassTypes field will be updated, if nothing is detected empty ClassType will be sent.

BestShot RTP Stream:

Best shot image, can also be retrieved on the client end using additional RTP session dedicated for bestshot image streaming. It would be provided only when describe request has “**Require: Bestshot**”

Request (Example):

```
DESCRIBE rtsp://192.168.9.100:554/profile2/media.smp RTSP/1.0
```

```
CSeq: 2
```

Authorization: Digest

username="admin",realm="iPOLiS",nonce="C9AB5CEC50A78C07C25704A9675B171E",uri="rtsp://192.168.9.100:554/profile2/media.smp",cnonce="814ae708b84f4f0f9f2e51fe1624166d",nc=00000001,response="40899fab43a5df53c72f8b3683f023e2",qop="auth"

User-Agent: oscar-rtsp-client

Require: Bestshot

SDP RESPONSE format:

a=control:rtsp://192.168.75.52:554/0/onvif/profile1/media.smp

a=range:npt=now-

m=video 40104 RTP/AVP 26

a=rtpmap:26 JPEG/90000

a=control:rtsp://192.168.75.52:554/0/onvif/profile1/media.smp/trackID=v

m=application 40106 RTP/AVP 107

b=AS:8

a=rtpmap:107 vnd.onvif.metadata/90000

a=control:rtsp://192.168.75.52:554/0/onvif/profile1/media.smp/trackID=m

a=recvonly

m=video 40108 RTP/AVP 26

i=MetaImageSession

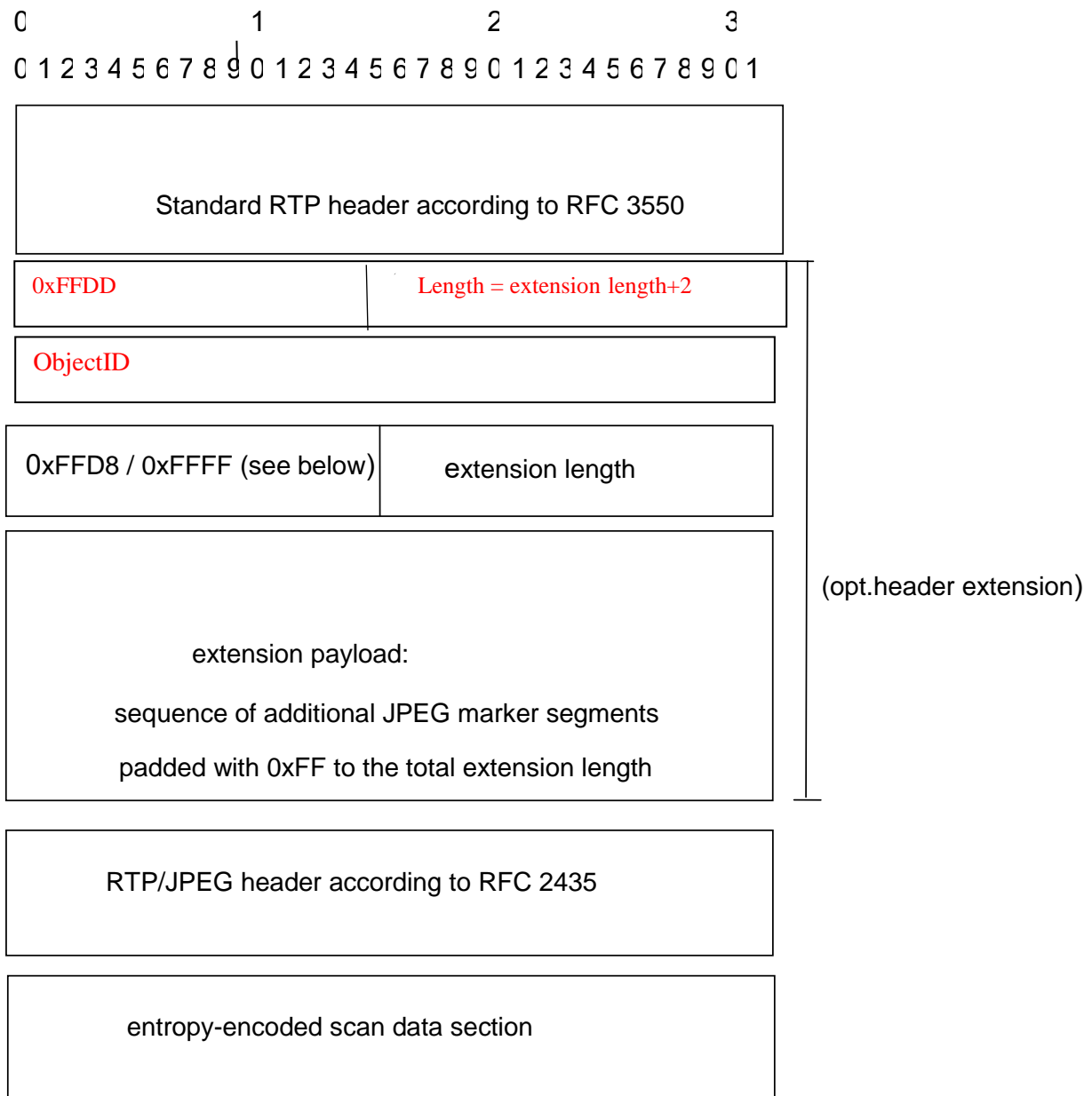
a=rtpmap:26 JPEG/90000

a=control:rtsp://192.168.75.52:554/0/onvif/profile1/media.smp/trackID=MI

a=recvonly

RTP Extension to pass the object ID

In the below extension, if the resolution of the JPEG is over 3 MegaPixels ONVIF extension header can be used in addition. In that case the Length of the extension header is extensionlength+2, if the resolution is less than 3 mega pixel Length of extension header is Just 1.



Note:

In the metaimage RTP session, RTP timestamp need not be monotonically in increasing order, rtp timestamp will be based on the bestshot capture time it can be before the current time. Current ntp time of camera can be retrieved from RTCP and based on that frame time can be calculated.

Metadata Format:

Things marked in [Blue](#) color is custom extension for our camera, what we defined.

Parent : to describe the relationship between objects eg., Vehicle and Number Plate (Vehicle object is parent for Number plate), Human and Face (Human is parent for the Face)

ImageRef: Temporary image stored in the camera or central server for the client to retrieve.

ClassTypes can be: Human, Face, LicensePlate, Vehicle, Head and Unknown

Refer to below section to get the class type information along with the confidence level.

```
<tt:Class>
<tt:Type Likelihood="0.8">LicensePlate</tt:Type>
</tt:Class>
```

NOTE : <CORRECTIONS>

Following corrections are applied to the metadata to make it sync with ONVIF spec.

1.) Namespace of Humanbody and HumanFace tag is corrected to tt:

Before	After
<fc:HumanFace> <fc:Gender> Male </fc:Gender> <fc:AgeType>Adult</fc:AgeType> <fc:Accessory> <fc:Opticals> ...	<tt:HumanFace> <fc:Gender> Male </fc:Gender> <fc:AgeType>Adult</fc:AgeType> <fc:Accessory> <fc:Opticals> ...
<bd:HumanBody> <bd:Gender> Male </bd:Gender> <bd:Clothing> <bd:Hat> <bd:Wear>>false</bd: ...	<tt:HumanBody> <bd:Gender> Male </bd:Gender> <bd:Clothing> <bd:Hat> <bd:Wear>>false</bd:

2.) Boolean type (true/false) is corrected to lower case as per spec.

Before	After
<bd:Wear> False </bd:Wear>	<bd:Wear> false </bd:Wear>

Supported attributes can be found in below table:

Note: Things marked in **RED** is not supported in current release and have fixed values as marked in table below.

	Objects	Attributes	Supported attributes items
Attributes	Person	Gender	Female, Male
		Upper(Color)	Black, Gray, White, Red, Orange, Yellow, Green, Blue, Purple (up to 2 colors at the same time)
		Lower(Color)	
		Upper(Clothing)	Long, Short (always Long)
		Lower(Clothing)	Long, Short (always Long)
		Hat	Wear Hat or Not (always False)
		Bag	Bag (If Bag is detected)
	Vehicle	Type	Car(Sedan/SUV/Van...etc), Bus, Truck, Motorcycle, Bicycle
		Color	Black, Gray, White, Red, Orange, Yellow, Green, Blue, Purple (up to 2 colors at the same time)
	Face	Gender	Female, Male
		Age	Young (0~19), Adult (20~44), Middle (45~64), Senior (65~)
		Hat	Wear Hat or Not (always False)
		Mask	Wear Mask or Not
		Glasses	Wear Glasses or Not
	Licenseplate		

```
<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="2019-05-15T12:24:57.321">
```

```
<tt:Transformation>
```

<tt:Translate x="-1.0" y="1.0" />
<tt:Scale x="0.000781" y="-0.001042" />
</tt:Transformation>
<tt:Object ObjectId="15" Parent="12" >
<tt:Appearance>
<tt:Shape>
<tt:BoundingBox left="15.0" top="141.0" right="51.0" bottom="291.0" />
<tt:CenterOfGravity x="31.0" y="218.0" />
</tt:Shape>
<tt:Color>
<tt:ColorCluster>
<tt:Color X="58" Y="105" Z="212" />
<tt:Covariance XX="7.2" YY="6" ZZ="3" />
<tt:Weight>90</tt:Weight>
<tt:ColorString>WHITE</tt:ColorString>
</tt:ColorCluster>
<tt:ColorCluster>
<tt:Color X="165" Y="44" Z="139" />
<tt:Covariance XX="4" YY="4" ZZ="4" />
<tt:Weight>5</tt:Weight>
<tt:ColorString>BLUE</tt:ColorString>
</tt:ColorCluster>
</tt:Color>
<tt:Class>
<tt:Type Likelihood="0.8">LicensePlate</tt:Type>
</tt:Class>
<tt:VehicleInfo>
<tt:Type Likelihood="0.8"> car </tt:Type>
</tt:VehicleInfo>
<tt:HumanFace>
<fc:Gender> Male </fc:Gender>
<fc:AgeType>Adult</fc:AgeType>

```
<fc:Accessory>
<fc:Opticals>
<fc:Wear>true</fc:Wear>
</fc:Opticals>
<fc:Mask>
<fc:Wear>true</fc:Wear>
</fc:Mask>
<fc:Hat>
<fc:Wear>>false</fc:Wear>
</fc:Hat>
</fc:Accessory>
</tt:HumanFace>
<tt:HumanBody>
<bd:Gender> Male </bd:Gender>
<bd:Clothing>
<bd:Hat>
<bd:Wear>>false</bd:Wear>
</bd:Hat>
<bd:Tops>
<tt:Color>
<tt:ColorCluster>
<tt:Color X="58" Y="105" Z="212" />
<tt:Covariance XX="7.2" YY="6" ZZ="3" />
<tt:Weight>90</tt:Weight>
<tt:ColorString>WHITE</tt:ColorString>
</tt:ColorCluster>
<tt:ColorCluster>
<tt:Color X="165" Y="44" Z="139" />
<tt:Covariance XX="4" YY="4" ZZ="4" />
<tt:Weight>5</tt:Weight>
<tt:ColorString>BLUE</tt:ColorString>
</tt:ColorCluster>
```

</tt:Color>
<bd:Length>Long</bd:Length>
</bd:Tops>
<bd:Bottoms>
<tt:Color>
<tt:ColorCluster>
<tt:Color X="58" Y="105" Z="212" />
<tt:Covariance XX="7.2" YY="6" ZZ="3" />
<tt:Weight>90</tt:Weight>
<tt:ColorString>WHITE</tt:ColorString>
</tt:ColorCluster>
<tt:ColorCluster>
<tt:Color X="165" Y="44" Z="139" />
<tt:Covariance XX="4" YY="4" ZZ="4" />
<tt:Weight>5</tt:Weight>
<tt:ColorString>BLUE</tt:ColorString>
</tt:ColorCluster>
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</tt:Appearance>

</tt:Object>

</tt:Frame>

</tt:VideoAnalytics>

</tt:MetadataStream>

ImageRef :

URL can also have relative addressing

../download/objected_1_23323333_100.jpg