

AI Network Camera  
Extended Function Software  
(AI Occupancy Detection Application)

External Interface Specification

V1.21

i-PRO Co., Ltd.

Change log

Ver	Date	Num	Details	Trigger
0.01	2021/1/29	All	First	—
1.00	2021/3/9	3	-Add CGI	—
		4	-Add additional information	
1.10	2021/12/2	2.1	-Corrected the transmission interval based on the hour (0:00:01)	Software fix
		2.2	-Changed the definition of the number of people detected on time -When "Notification interval setting" is N minutes, the latest N congestion statistics are sent. (Supported from app version V1.20)	
		2.2 3.1	-Changed the name of parameter. All.current ->ALL.Current All.list ->ALL.list Area1.current->Area1.Current Area2.current->Area2.Current Area3.current->Area3.Current Area4.current->Area4.Current	Document fix
		3.1	- Corrected the description of "min"	
		1.1 5	New addition	
1.20	2022/4	2.2 2.4 3.1	Add MAC address and channel number to the information sent via HTTP. (V1.30 or later)	Software version upgrade
		3.1 3.2	Added the example of CGI for Multi-Sensor Camera	
		Cover	Changed the name of a company	Changes in the name of a company
		3.1	- Corrected the example of CGI - Corrected the description of "min"	Document fix
		2.1	Added authentication method	
		2.4 3.1	- Changed the name of parameter. All.current ->ALL.Current All.list ->ALL.list Area1.current->Area1.Current	

			Area2.current->Area2.Current Area3.current->Area3.Current Area4.current->Area4.Current	
1.21	2022/7	2.2 3.1	Corrected the erroneous description	Document fix
		5.	New addition	Software version upgrade

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## 1 . Introduction

This document provides the specifications for the external I/F of the AI Occupancy Detection application (WV-XAE207W [V1.40]). See Chapter 6 for changes to the external I / F specifications from previous versions.

### 1.1. Functional specifications

This function counts the number of people staying in the area and generates an alarm when the alarm threshold (number of people, staying time) is exceeded. Count information can be obtained via HTTP or as additional information via H.264 / H.265 and JPEG streams.

In the case of via HTTP, after changing the time, the data of the time before the change may be sent for a while.

## 2 . HTTP periodic transmission

### 2.1. Telegraphic protocol specification

When using the telegraphic protocol between the AI Occupancy Detection application (camera) – PC, the HTTP protocol is used. As an HTTP client, the camera sends data to a server, such as a processing unit PC.

	Item	Specification
1	Number of destination	4
2	Address	Configurable by IPv4 or host name.
3	Port	1~65535
4	Connection	Disconnect the session after each transmission.
5	Content-type	application/json
6	Secure	TLS 1.2
7	Transmission interval	1min,5min,10min,15min,30min,60min  e.g.) 5min Transmit every 5 minutes based on 0:00:01 *The transmission time may deviate slightly.
8	Authentication	Digest authentication is used only when user name and password are set.

## 2.2. Detail of Telegraphic protocol

This section describes the information to be sent from the camera to the server. Common information is stored in the Header section and individual information is stored in the Body section as meta-information. The meta-information is sent every time the notification interval is set. The number of detected persons to be sent is sent in unit of one minute.

**【Common information (Header part)】**

Parameter	value	Detail
X-SendTime	Date and Time(UTC)	Date and time Format : [yyyy-mm-dd]T[hh:mm:ss.xx]Z  e.g.)JST, August 29, 2013 12:35:01.00 2013-08-29T03:35:01.00Z
X-TZ	-1200~+1300	Time difference from UTC  e.g.) Osaka, Sapporo, Tokyo (time difference of 9 hours)  X-TZ : +0900
X-ST	0, 1	Daylight saving time setting 0:non-daylight saving time 1:daylight saving time

**【Number of people information (Body part)】**

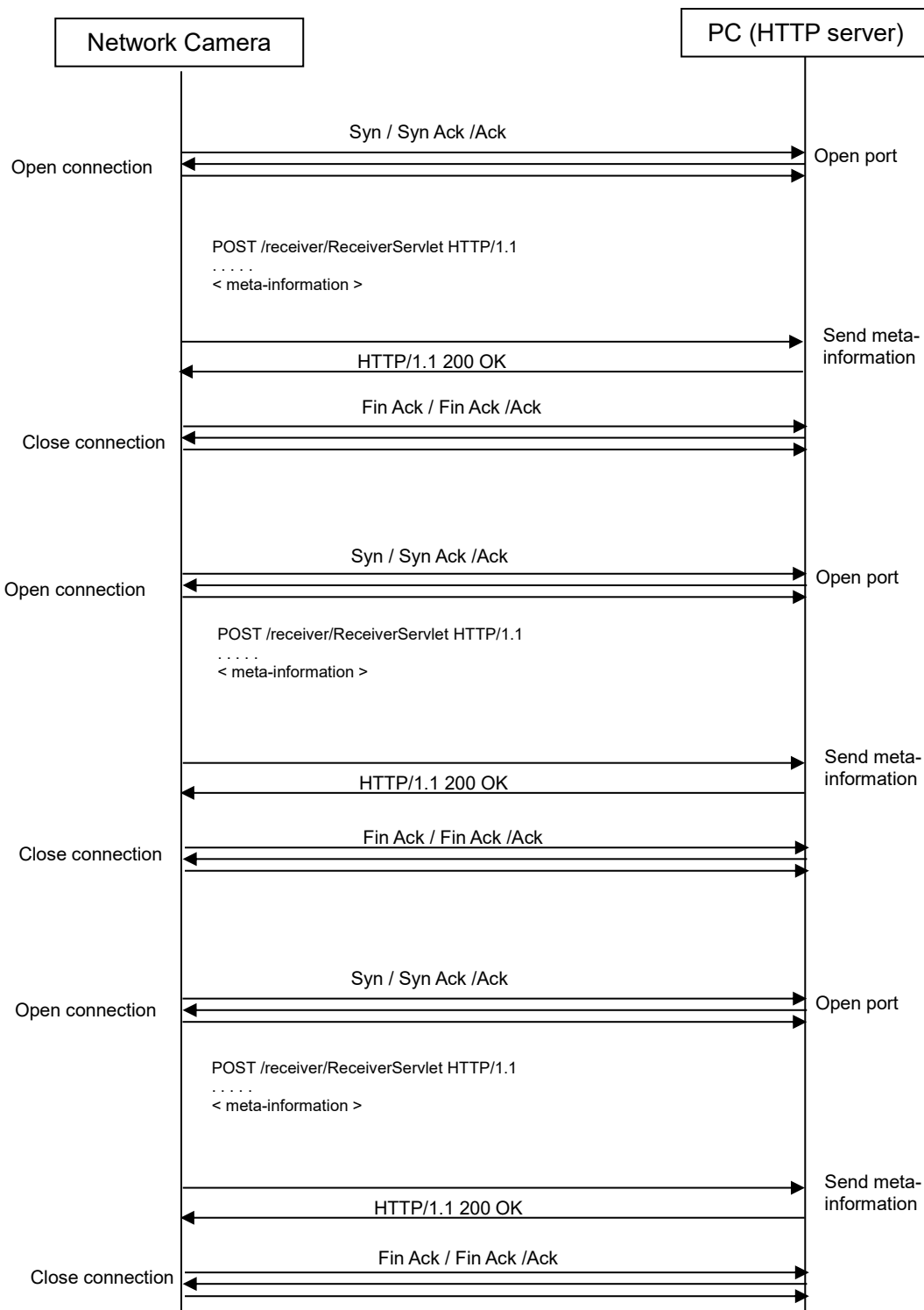
Parameter	Value	Notation	Detail
CameraIPAddress	(0~255).(0~255). (0~255).(0~255)	Decimal number	Camera IP address (Text type: half-width alphanumeric characters)
CameraMACaddress	(00~ff):(00~ff):(00~ff): (00~ff):(00~ff):(00~ff)	Hex number	Camera MAC address
Ch	1, 2, 3, 4	Decimal number	Channnel number of Multi-Sensor Camera  *This is applied when the camera is Multi-Sensor Camera.
Time	Date and time(UTC)		Date and time Format: yyyy/mm/dd hh:mm:ss

			e.g.) August 29, 2013 12:35:01 Japan time 2013/08/29 03:35:01
TimeZone	-1200~+1300		Time difference from UTC  e.g.) Osaka, Sapporo, Tokyo (time difference of 9 hours) "TimeZone":"+0900"
SummerTime	0, 1		Daylight saving time setting 0:non-daylight saving time 1:daylight saving time
ALL.list	["Date and time(UTC)", Average number of detected people, Number of people detected on time]		Number of people in the entire screen (Text type: half-width numeric characters)  When "Notification interval setting" is N minutes, the latest N congestion statistics are sent.  [Date and time(UTC)] Fixed time information for each minute. e.g.) 2021/1/11 9:00 2021/1/11 9:00:00~2021/1/11 9:00:59  [Average number of detected people]: Average number of detected users per [Date and time (UTC)]. (Average number of people detected between xx:xx:00 - xx:xx:59)  [Number of people detected on time] Number of people detected on time (The number of people detected at the moment of xx:xx:01)
ALL.Current	0~40		Number of people detected in real time for the entire screen (Text type: half-width alphanumeric)

			characters)
Area1.list Area2.list Area3.list Area4.list	[“Date and time(UTC”, Average number of detected people, Number of people detected on time]		Number of people in each detection areas (Text type: half-width numeric characters) When "Notification interval setting" is N minutes, the latest N congestion statistics are sent.  [Date and time(UTC)] Fixed time information for each minute. e.g.) 2021/1/11 9:00 2021/1/11 9:00:00~2021/1/11 9:00:59  [Average number of detected people]: Average number of detected users per [Date and time (UTC)]. (Average number of people detected between xx:xx:00 - xx:xx:59)  [Number of people detected on time] Number of people detected on time (The number of people detected at the moment of xx:xx:01)
Area1.Current Area2.Current Area3.Current Area4.Current	0~40		Number of people detected in real time for each detection area (Text type: half-width alphanumeric characters)

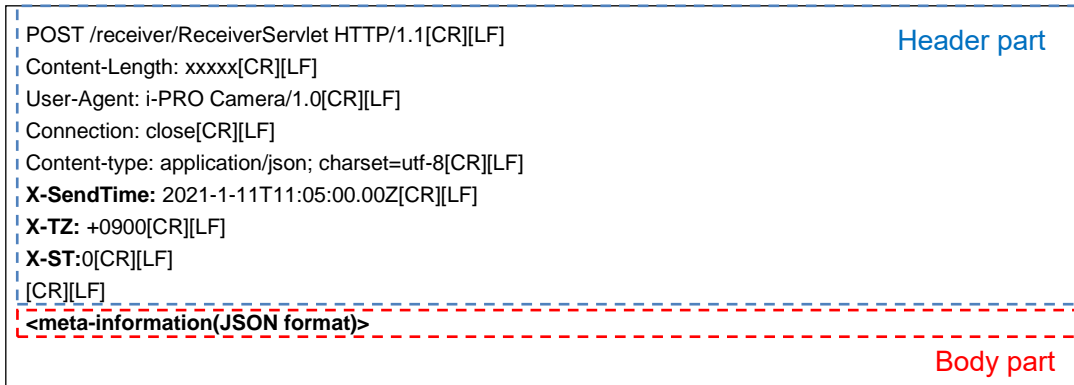
\*It does not include information about the time when the detection area was not set or was disabled.

### 2.3. Telegraphic protocol sequence



## 2.4. Transmission format

An example of the transmission format is shown below.



The format of meta-information (Body part) is shown below.

[ 1 ] Multi-Sensor Camera(MAC address = 00:11:22:33:aa:bb, channel number = 1),

Detection area = {Area 1, 2}, Effective detection area = {Area 1}, Transmission interval setting = {5min}

Transmission time : {JST 2021/1/11 20:05:00}

```
{
  "CameraIPaddress":"192.168.0.10",
  "CameraMACaddress":"00:11:22:33:aa:bb",
  "Ch": "1",
  "Time":"2021/1/11 11:05:00",
  "TimeZone":"+0900",
  "SummerTime":0,
  "ALL":[
    {"list": [{"2021/1/11 11:00", 8, 7},
              ["2021/1/11 11:01", 9, 8],
              ["2021/1/11 11:02", 10, 9],
              ["2021/1/11 11:03", 12, 10],
              ["2021/1/11 11:04", 12, 10]
            ]
    },
    {"Current":12}
  ],
  "Area1":[
    {"list": [{"2021/1/11 11:00", 5, 4},
              ["2021/1/11 11:01", 7, 6],
              ["2021/1/11 11:02", 8, 6],
              ["2021/1/11 11:03", 9, 8],
              ["2021/1/11 11:04", 6, 6]
            ]
    },
    {"Current":7}
  ],
  "Area2":[
    {"list": []},
    {"Current":0}
  ],
  "Area3":[
    {"list":[]},
    {"Current":0}
  ],
  "Area4":[
    {"list":[]},
    {"Current":0}
  ]
}
```

Transmission time : {JST 2021/1/11 20:10:00}

```
{
  "CameraIPAddress": "192.168.0.10",
  "CameraMACAddress": "00:11:22:33:aa:bb",
  "Ch": "1",
  "Time": "2021/1/11 11:10:00",
  "TimeZone": "+0900",
  "SummerTime": 0,
  "ALL": [
    {
      "list": [
        ["2021/1/11 11:05", 8, 9],
        ["2021/1/11 11:06", 10, 8],
        ["2021/1/11 11:07", 10, 8],
        ["2021/1/11 11:08", 13, 12],
        ["2021/1/11 11:09", 12, 12]
      ]
    },
    {"Current": 16}
  ],
  "Area1": [
    {
      "list": [
        ["2021/1/11 11:05", 5, 6],
        ["2021/1/11 11:06", 6, 6],
        ["2021/1/11 11:07", 8, 8],
        ["2021/1/11 11:08", 10, 9],
        ["2021/1/11 11:09", 9, 10]
      ]
    },
    {"Current": 9}
  ],
  "Area2": [
    {"list": []},
    {"Current": 0}
  ],
  "Area3": [
    {"list": []},
    {"Current": 0}
  ],
  "Area4": [
    {"list": []},
    {"Current": 0}
  ]
}
```

[ 2 ] Network Camera(MAC address = 00:11:22:33:aa:bb) other than Multi-Sensor Camera,  
Detection area = {Area 1, Area 2}, Effective detection area = {Area 1, Area 2}, Transmission interval  
setting = {1min}

Transmission time : {JST 2021/1/11 20:05:00}

```
{
  "CameraIPaddress":"192.168.0.10",
  "CameraMACaddress":"00:11:22:33:aa:bb",
  "Time":"2021/1/11 11:05:00",
  "TimeZone":"+0900",
  "SummerTime":0,
  "ALL":[
    {"list": [{"2021/1/11 11:04", 7, 7}]},
    {"Current":7}
  ],
  "Area1":[
    {"list": [{"2021/1/11 11:04", 6, 5}]},
    {"Current":6}
  ],
  "Area2":[
    {"list": [{"2021/1/11 11:04", 4, 4}]},
    {"Current":4}
  ],
  "Area3":[
    {"list": []},
    {"Current":0}
  ],
  "Area4":[
    {"list": []},
    {"Current":0}
  ],
}
```

Transmission time : {JST 2021/1/11 20:06:00}

```
{
  "CameraIPaddress":"192.168.0.10",
  "CameraMACaddress":"00:11:22:33:aa:bb",
  "Time":"2021/1/11 11:06:00",
  "TimeZone":"+0900",
  "SummerTime":0,
  "ALL":[
    {"list": [{"2021/1/11 11:05", 7, 6}]},
    {"Current":7}
  ],
  "Area1":[
    {"list": [{"2021/1/11 11:05", 6, 5}]},
    {"Current":4}
  ],
  "Area2":[
    {"list": [{"2021/1/11 11:05", 4, 4}]},
    {"Current":4}
  ],
  "Area3":[
    {"list": []}
  ],
  "Area4":[
    {"list": []}
  ],
}
```

### 3 . Get information by CGI

#### 3.1. The Number of people information

**【Outline】**

The number of people is obtained per minute as meta-information by CGI.

**【CGI URL】**

- Multi-Sensor Camera (The following describes an example when channel 1 is specified.)

http://(Camera IP address)/cgi-

bin/adam.cgi?methodName=sendDataToAdamApplication&appName=AIOccupancyDetection&channel=1&s\_appDataType=0&s\_appData=(base64 data)

- Network Camera other than Multi-Sensor Camera

http://(Camera IP address)/cgi-

bin/adam.cgi?methodName=sendDataToAdamApplication&appName=AIOccupancyDetection&s\_appDataType=0&s\_appData=(base64 data)

**【Request Parameters】**

Parameter	Detail
methodName	sendDataToAdamApplication
appName	AIOccupancyDetection
processId	Process identification ID (always set to 0). Can be omitted.
s_appDataType	Transmission data type
s_appData	Transmission data *base64 encoding

**【base64 data】**

Parameter	Value	Detail
appMethod	get_result	Set the method.
min	1~1440	From the last 24 hours of data stored in the application, information that goes back “min” (in units of 1 minute) from the timing when the CGI is received is returned as the response.  If the camera or application is rebooted, the saved data will be deleted.

The configuration data is JSON format.

When using it, base64 encode the following configuration values and enclose the parameter “min” and its value in "".

```
{{appMethod:get_result},{\"min\":\"xx\"}}
```

e.g.) Network Camera other than Multi-Sensor Camera, min = {5},

Encode the following configuration data into base64

Original data : {{appMethod:get\_result},{\"min\":\"5\"}}

Encoded : e3thcHBNZXRob2Q6Z2V0X3Jlc3VsdH0seyJtaW4iOiI1In19

CGI :

http://(Camera IP address)/cgi-

bin/adam.cgi?methodName=sendDataToAdamApplication&appName=AIOccupancyDetection&s\_appDataType=0&s\_appData= e3thcHBNZXRob2Q6Z2V0X3Jlc3VsdH0seyJtaW4iOiI1In19

**【Response Parameters】**

(Normal)

According to CGI.

Details are given in [Response Format].

(Abnormal)

Return value name	Detail
faultCode	Error code
faultString	Error string
"400" Bad Request	
faultCode="1"	faultString="Invalid Parameter" s_appData cannot be base64 decoded.
faultCode="4"	faultString="Invalid Process ID" The additional application with the specified process identification ID is not running.
faultCode="10"	faultString="Invalid Protocol" There is an error in the argument.
faultCode="25"	faultString="Invalid Application Name" The specified application name is invalid.
"409" Conflict	
faultCode="13"	faultString="Bad Application Status" Data cannot be accepted because the specified application is in the process of starting or stopping, etc.
"500" Internal Server Error	
faultCode="14"	faultString="File Access Error" Internal error (file access error)
faultCode="15"	faultString="I/O error" Internal error (I/O error)
faultCode="16"	faultString="Not Enough Memory" Internal error (insufficient memory)
faultCode="18"	faultString="Internal Error" Internal error (other error)

**【Response format】**

Parameter	Value	Notation	Detail
CameraIPAddress	(0~255).(0~255). (0~255).(0~255)	Decimal number	Camera IP address (Text type: half-width alphanumeric characters)
CameraMACaddress	(00~ff):(00~ff):(00~ff): (00~ff):(00~ff):(00~ff)	Hex number	Camera MAC address
Ch	1, 2, 3, 4	Decimal number	Channnel number of Multi-Sensor Camera *This is applied when the camera is Multi-

			Sensor Camera.
Time	Date and time(UTC)		Date and time Format: yyyy/mm/dd hh:mm:ss  e.g.) August 29, 2013 12:35:00 Japan time 2013/08/29 03:35:00
TimeZone	-1200~+1300		Time difference from UTC  e.g.) Osaka, Sapporo, Tokyo (time difference of 9 hours) "TimeZone":"+0900"
SummerTime	0, 1		Daylight saving time setting 0:non-daylight saving time 1:daylight saving time
ALL.list	["Date and time(UTC)", Average number of detected people, Number of people detected on time]		Number of people in the entire screen (Text type: half-width numeric characters)  [Date and time(UTC)] Fixed time information for each minute. e.g.) 2021/1/11 9:00 2021/1/11 9:00:00~2021/1/11 9:00:59  [Average number of detected people]: Average number of detected users per [Date and time (UTC)]. (Average number of people detected between xx:xx:00 - xx:xx:59)  [Number of people detected on time] Number of people detected on time (The number of people detected at the moment of xx:xx:00)
ALL.Current	0~40		Number of people detected in real time for the entire screen (Text type: half-width alphanumeric characters)
Area1.list Area2.list Area3.list	["Date and time(UTC)", Average number of		Number of people in each detection areas (Text type: half-width numeric characters)

Area4.list	detected people, Number of people detected on time]		[Date and time(UTC)] Fixed time information for each minute. e.g.) 2021/1/11 9:00 2021/1/11 9:00:00~2021/1/11 9:00:59  [Average number of detected people]: Average number of detected users per [Date and time (UTC)]. (Average number of people detected between xx:xx:00 - xx:xx:59)  [Number of people detected on time] Number of people detected on time (The number of people detected at the moment of xx:xx:00)
Area1.Current Area2.Current Area3.Current Area4.Current	0~40		Number of people detected in real time for each detection area (Text type: half-width alphanumeric characters)

Response is returned in the following format.(The following is the case of using Multi-Sensor Camera.)

```

-----
{
  "CameraIPaddress":"xxx.xxx.xxx.xxx",
  "CameraMACaddress":"xx:xx:xx:xx:xx:xx",
  "Ch":"x",
  "Time":"xxxx/xx/xx xx:xx:xx",
  "TimeZone":"xxxx",
  "SummerTime":x,
  "ALL":[
    {"list": [{"xxxx/xx/xx xx:xx:xx", xx, xx}]},
    {"Current":xx}
  ],
  "Area1":[
    {"list": [{"xxxx/xx/xx xx:xx:xx", xx, xx}]},
    {"Current":xx}
  ],
  "Area2":[
    {"list": [{"xxxx/xx/xx xx:xx:xx", xx, xx}]},
    {"Current":xx}
  ],
  "Area3":[
    {"list": [{"xxxx/xx/xx xx:xx:xx", xx, xx}]},
    {"Current":xx}
  ],
}
```

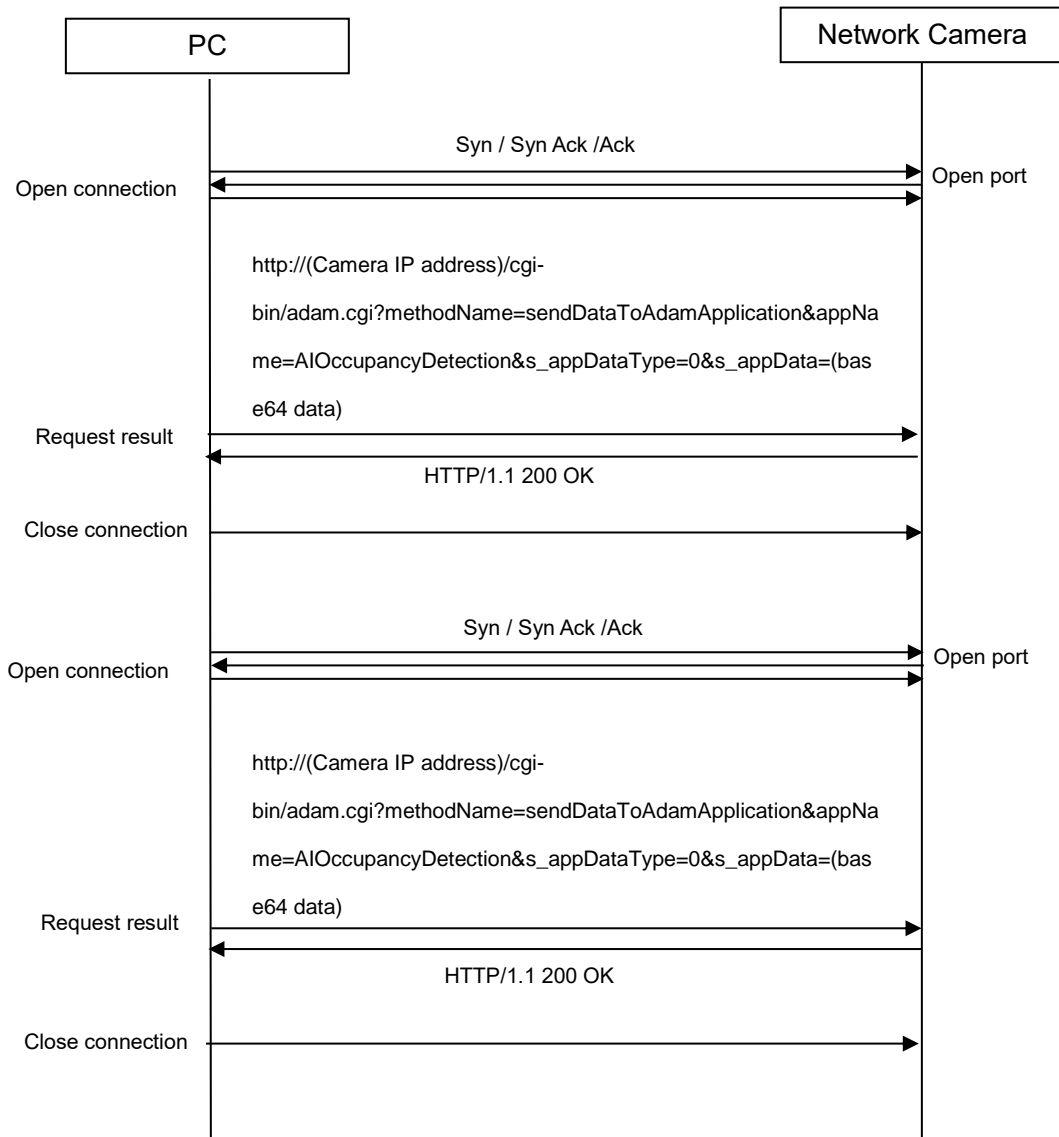
```

"Area4":[
  {"list": [{"xxxx/xx/xx xx:xx:xx", xx, xx}]},
  {"Current":xx}
],
}

```

---

【Sequence】



e.g.)

[1] Multi-Sensor Camera(MAC address = 00:11:22:33:aa:bb, channel number = 1),  
min = {5}, detection area = {area 1}, effective detection area = {area 1},  
Transmission time: {JST 2021/1/11 20:05:40}

```
{
  "CameraIPaddress":"192.168.0.10",
  "CameraMACaddress":"00:11:22:33:aa:bb",
  "Ch": "1",
  "Time":"2021/1/11 11:05:40",
  "TimeZone":"+0900",
  "SummerTime":0,
  "ALL":[
    {"list": [{"2021/1/11 11:00", 8, 7},
              ["2021/1/11 11:01", 9, 8],
              ["2021/1/11 11:02", 10, 9],
              ["2021/1/11 11:03", 12, 10],
              ["2021/1/11 11:04", 12, 10]
            ]
    },
    {"Current":12}
  ],
  "Area1":[
    {"list": [{"2021/1/11 11:00", 5, 4},
              ["2021/1/11 11:01", 7, 6],
              ["2021/1/11 11:02", 8, 6],
              ["2021/1/11 11:03", 9, 8],
              ["2021/1/11 11:04", 6, 6]
            ]
    },
    {"Current":7}
  ],
  "Area2":[
    {"list": []},
    {"Current":0}
  ],
  "Area3":[
    {"list": []},
    {"Current":0}
  ],
  "Area4":[
    {"list": []},
    {"Current":0}
  ]
}
```

[2] Network Camera(MAC address = 00:11:22:33:aa:bb) other than Multi-Sensor Camera,  
min = {1}, detection area = {area 1, area 2}, effective detection area = {area 1, area 2},  
Transmission time : {JST 2021/1/11 20:05:10}

```
{
  "CameraIPaddress":"192.168.0.10",
  "CameraMACaddress":"00:11:22:33:aa:bb",
  "Time":"2021/1/11 11:05:00",
  "TimeZone":"+0900",
  "SummerTime":0,
  "ALL":[
    {"list": [{"2021/1/11 11:04", 7, 7}]},
    {"Current":7}
  ],
  "Area1":[
    {"list": [{"2021/1/11 11:04", 6, 5}]},
    {"Current":6}
  ],
  "Area2":[
    {"list": [{"2021/1/11 11:04", 4, 4}]},
    {"Current":4}
  ],
  "Area3":[
    {"list": []},
    {"Current":0}
  ],
  "Area4":[
    {"list": []},
    {"Current":0}
  ],
}
```

### 3.2. Detection area information

#### 【Outline】

Detection area is obtained by CGI.

#### 【CGI URL】

- Multi-Sensor Camera (The following describes an example when channel 1 is specified.)

http://(Camera IP address)/cgi-

bin/adam.cgi?methodName=getApplicationPreference&appName=AIOccupancyDetection&channel=

1

- Network Camera other than Multi-Sensor Camera

http://(Camera IP address)/cgi-

bin/adam.cgi?methodName=getApplicationPreference&appName=AIOccupancyDetection

**【Request Parameters】**

Parameter	Detail
methodName	getApplicationPreference
appName	AIOccupancyDetection
processId	Process identification ID (always set to 0). Can be omitted.

**【Response Parameters】**

(Normal)

According to CGI.

Details are given in [Response Format].

(Abnormal)

Return value name	Detail
faultCode	Error code
faultString	Error string
"400" Bad Request	
faultCode="10"	faultString="Invalid Protocol" There is an error in the argument.
faultCode="25"	faultString="Invalid Application Name" The specified application name is invalid.
"409" Conflict	
faultCode="13"	faultString="Bad Application Status" Data cannot be accepted because the specified application is in the process of starting or stopping, etc.
"500" Internal Server Error	
faultCode="14"	faultString="File Access Error" Internal error (file access error)
faultCode="15"	faultString="I/O error" Internal error (I/O error)
faultCode="16"	faultString="Not Enough Memory" Internal error (insufficient memory)
faultCode="18"	faultString="Internal Error" Internal error (other error)

**【Response format】**

Parameter	Value	Detail
prefName	det_area1~4	Detection area 1~4

		e.g.) Detection area 1 “prefName”:”det_area1”
defaultValue	(1~F)+(0~639+0~359)× Max 16 (Default area)	1~F : Number of vertices (0~639+0~359)×Max 16 : Bit strings of coordinate information for up to 16 vertices
value	(1~F)+(0~639+0~359)× Max 16 (Setting area)	1~F : Number of vertices (0~639+0~359)×Max 16 : Bit strings of coordinate information for up to 16 vertices

Response is returned in the following format.

-----

```
{Other setting},
{
  "prefName": "det_area1",
  "prefType": "String",
  "appApiAccess": "ReadWrite",
  "webApiAccess": "ReadWrite ",
  "defaultValue": "300000000063900000639035900000359",
  "value": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
},
{
  "prefName": "det_area2",
  "prefType": "String",
  "appApiAccess": "ReadWrite",
  "webApiAccess": "ReadWrite ",
  "defaultValue": " ",
  "value": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx "
},
{
  "prefName": "det_area3",
  "prefType": "String",
  "appApiAccess": "ReadWrite",
  "webApiAccess": "ReadWrite ",
  "defaultValue": " ",
  "value": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx "
}
```

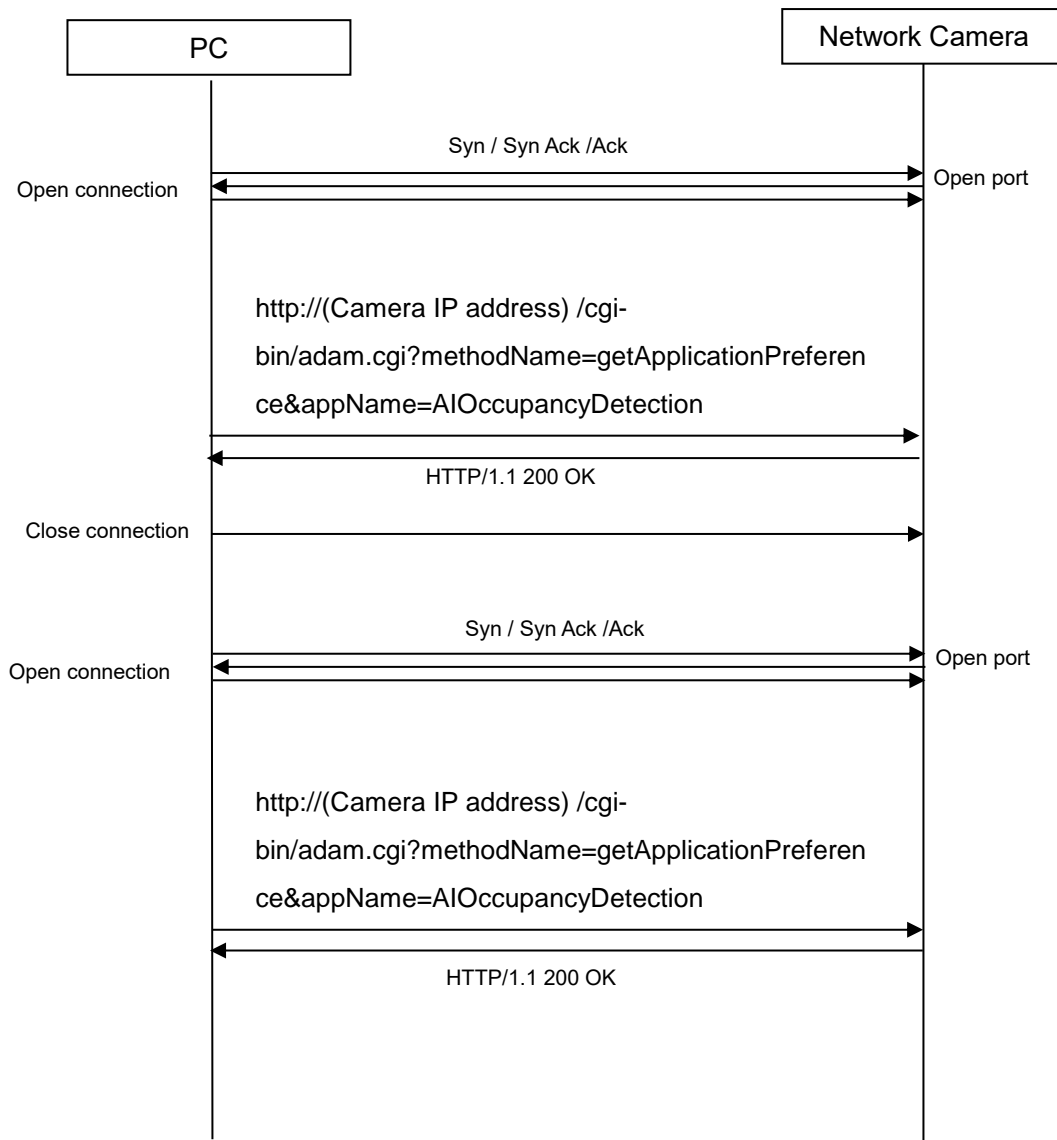
```

},
{
  "prefName": "det_area4",
  "prefType": "String",
  "appApiAccess": "ReadWrite",
  "webApiAccess": "ReadWrite ",
  "defaultValue": " ",
  "value": " xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx "
},
{other setting}

```

---

**【Sequence】**



e.g.)

Detection area 1~4

```
{
  "prefName":"det_area1",
  "prefType":"String",
  "appApiAccess":"ReadWrite",

  "webApiAccess":" ReadWrite ",
  "defaultValue":"300000000063900000639035900000359",
  "value":"305320145026501200423023403590456"
},

{
  "prefName":"det_area2",
  "prefType":"String",
  "appApiAccess":"ReadWrite",
  "webApiAccess":" ReadWrite ",
  "defaultValue":" ",
  "value":"302120223021202300356033402590267"
},

{
  "prefName":"det_area3",
  "prefType":"String",
  "appApiAccess":"ReadWrite",
  "webApiAccess":" ReadWrite ",
  "defaultValue":" ",
  "value":"301230378039803210352063501890637"
},

{
  "prefName":"det_area4",
  "prefType":"String",
  "appApiAccess":"ReadWrite",
  "webApiAccess":" ReadWrite ",
  "defaultValue":" ",
  "value":"301330508009805510102063502490637"
}
```

**Detection area frame**

”value”:"3 0133 0508 0098 0551 0102 0635 0249 0637”  
(1) (2) (3) (4) (5) (6) (7) (8) (9)

(1): Number of vertices + 1

\*Up to 16 vertices can be set (0~F).

(2)(3): The first vertex (x,y) ⇒ (133, 508)

(4)(5): The second vertex (x,y) ⇒ (98,551)

(6)(7): The third vertex(x,y) ⇒ (102,635)

(8)(9): The fourth vertex(x,y) ⇒ (249,637)

## 4. Stream additional information

### 4.1. Data format



### 4.2. Basic information

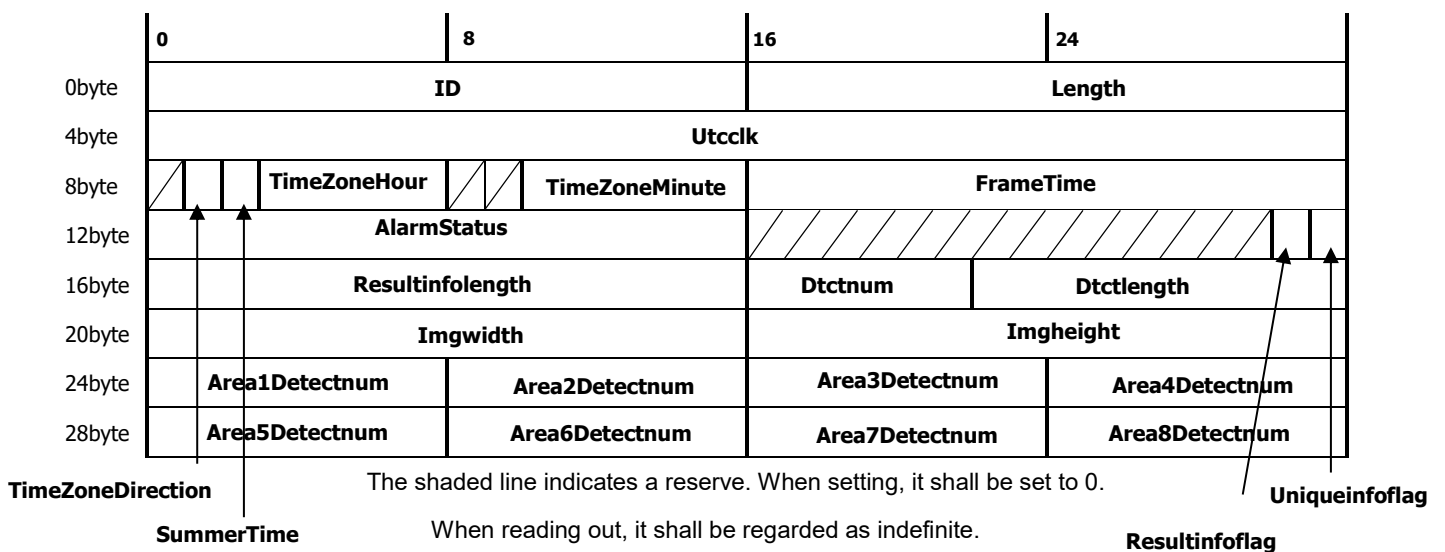
The data length of the basic information is fixed at 32 bytes.

The data list and data layout are shown below.

【Basic information data】

No.	Parameter	Size(bit)	Detail	Remark
1	ID	16	ID of additional information	0x0034
2	Length	16	Data length of additional information. Including ID and Length.(byte)	
3	Utcclk	32	UTC clock Total seconds (since 1970)	
	Reserved	1	Reserved area	
4	TimeZoneDirection	1	0x00: Positive direction 0x01: Negative direction	
5	SummerTime	1	0x00 : Winter time 0x01 : Summer time	
6	TimeZoneHour	5	0x00 : 0 hour ~ 0x17 : 23 hour	
	Reserved	2	Reserved area	
7	TimeZoneMinute	6	0x00 : 00 min ~ 0x3B : 59 min	
8	FrameTime	16	Counter in units of 10 msec to supplement Utcclk 0x00 : 0msec 0x01 : 10msec ~ 0x63 : 990msec	
9	AlarmStatus	16	Alarm information by area 0: Alarm not triggered 1: Alarm triggered	0bit: Detection area 1 1bit: Detection area 2 2bit: Detection area 3 3bit: Detection area 4  e.g.) When an alarm is

				issued in Area 1 and Area 3 0x0005
	Reserved	14	Reserved area	
10	Resultinfoflag	1	Availability of result information (frame information)	0:Not detected 1:Detected
11	Uniqueinfoflag	1	Availability of unique information	Don't care
12	Resultinfoflength	16	Data length of the detection frame information.(byte)	
13	Dtctnum	6	Number of detection frames for the entire screen.	Up to 40 frame
14	Dtctlenght	10	Amount of data per detection frame. (byte)	
15	Imgwidth	16	Image width	1920
16	Imgheight	16	Image height	1080
17	Area1Detectnum	8	Number of detection frames in detection area 1	Up to 40 frame
18	Area2Detectnum	8	Number of detection frames in detection area 2	Up to 40 frame
19	Area3Detectnum	8	Number of detection frames in detection area 3	Up to 40 frame
20	Area4Detectnum	8	Number of detection frames in detection area 4	Up to 40 frame
21	Area5Detectnum	8	Number of detection frames in detection area 5	
22	Area6Detectnum	8	Number of detection frames in detection area 6	
23	Area7Detectnum	8	Number of detection frames in detection area 7	
24	Area8Detectnum	8	Number of detection frames in detection area 8	



【Basic information data format】

### 4.3. Result information

The result information stores the information of the detected frames.

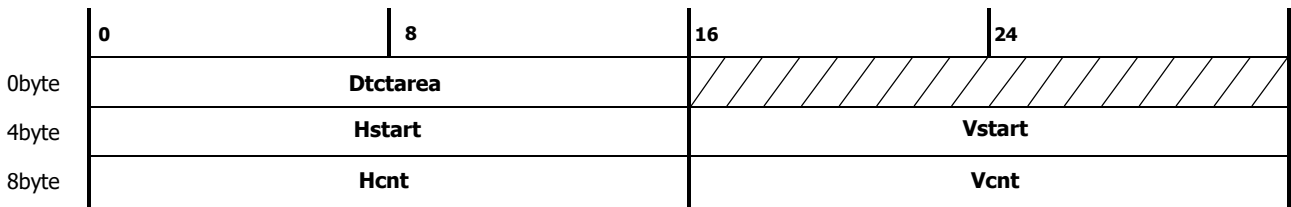
The data length of the result information depends on the number of detected frames and the data length of each frame. Since the number of detected frames and the data length of each frame are Dtctnum and Dtctlength in the basic information, respectively, we can write

$$\text{Data length of result information} = \text{Dtctnum} \times \text{Dtctlength}$$

in the basic information.

【Result information data】

No.	Parameter	Size(bit)	Detail	Remark
1	Dtctarea	16	Belonging detection area 0: Outside 1: Inside	0bit: Detection area 1 1bit: Detection area 2 2bit: Detection area 3 3bit: Detection area 4  If the areas overlap, take OR. If the frame does not belong to any area it will become 0x0000. (send frame information that does not belong to any area)  e.g.) Area 1 and area 2 0x0003
	Reserved	16	Reserved area	
2	Hstart	16	Horizontal starting coordinate of the box (top left)	Value converted to FHD coordinate system regardless of input YC resolution
3	Vstart	16	Vertical starting coordinate of the box (top left)	Value converted to FHD coordinate system regardless of input YC resolution
4	Hcnt	16	Horizontal width of the frame	Value converted to FHD coordinate system regardless of input YC resolution
5	Vcnt	16	Vertical width of the frame	Value converted to FHD coordinate system regardless of input YC resolution



The shaded line indicates a reserve. When setting, it shall be set to 0.

When reading out, it shall be regarded as indefinite.

【Result information data format】

## 5. MQTT periodic transmission

### 5.1. Setting specifications

It is necessary to make the following settings in advance with this application.

Items	Description
Transmission destination	Select whether to send or not * In order to transmit data using the MQTT protocol, it is necessary to enable MQTT setting of camera
Topic	Name of topic
QoS	QoS level(0, 1, 2) Retain: Select to save the last transmitted messages on the MQTT server
Transmission interval	1min, 5min, 10min, 15min, 30min, 60min

### 5.2. Detail of telegraphic protocol

This application transmits the following telegram as PUBLISH message.

Bit	7	6	5	4	3	2	1	0
1	Message Type				DUP Flag	QoS Level		Retain
2	Remaining Length							

[Data format of fixed header]

[Header part]

Parameter	Length	Values and comments
<b>Fixed header</b>		
Message Type	4-bit unsigned value	Message Type(0~15)
DUP Flag	1-bit	Flag for redelivering 0: Not redeliver 1: redeliver
QoS Level	2-bit	Quality of Service levels 0: At most once 1: At least once 2: Exactly once
Retain	1-bit	Flag for retaining

		0: Off 1: On
Remaining Length	8-bit	The number of bytes left in the current packet, including variable header and payload data
<b>Variable header</b>		
Msg Len	16bit (MSB, LSB)	Length of payload
Topic Length	16bit (MSB, LSB)	Length of topic name
Topic	UTF-encoded string	Topic name
Message Identifier	16-bit unsigned integer(MSB, LSB)	Message ID

[Payload]

Parameter	Value	Notation	Description
CameraIPAddress	(0~255)(0~255) (0~255)(0~255)	Decimal number	Camera IP address
CameraMACaddress	(00~ff)(00~ff) (00~ff)(00~ff) (00~ff)(00~ff)	Hex number	Camera MAC address
Ch	1, 2, 3, 4	Decimal number	Channel number of Multi-Sensor Camera *This is applied when the camera is Multi-Sensor Camera.
Time	Date and time(UTC)		Date and time Format: yyyyymmddhhmmss  e.g.) August 29, 2013 12:35:01 Japan time 20130829033501
TimeZone	01200~11300		Time difference from UTC Minus is represented by 0 and plus is represented by 1.  e.g.) Osaka, Sapporo, Tokyo (time difference of 9 hours) 10900
SummerTime	0, 1		Daylight saving time setting 0:non-daylight saving time

			1:daylight saving time
ALL_Current	0~100		Number of people detected in real time for the entire screen. (Text type: half-width alphanumeric characters)
Area1_Current Area2_Current Area3_Current Area4_Current	0~100		Number of people detected in real time for each detection area. (Text type: half-width alphanumeric characters)  * If the detection area is not set, send it blank.
Area1_Num_Total Area2_Num_Total Area3_Num_Total Area4_Num_Total	Average number of detected people		Average number of detected people for each detection area per transmission interval. (Average number of people detected between xx:xx:00 - xx:xx:59)  * If the detection area is not set, send it blank.

### 5.3. Transmission format

Multi-Sensor Camera(MAC address = 00:80:45:0d:00:01, channel number = 1),

Detection area = {Area 1, 2}, Effective detection area = {Area 1}, Transmission time: {JST 2021/01/11 20:05:00}

```
{
  "CameraIPAddress":"192168000010",
  "CameraMACAddress":"0080450d0001",
  "Ch":"1",
  "Time":"20210111110500",
  "TimeZone":"10900",
  "SummerTime":"0",
  "ALL_Current":"7",
  "Area1_Current":"7",
  "Area2_Current":"0",
  "Area3_Current":"0",
  "Area4_Current":"0",
  "Area1_Num_Total":"7",
  "Area2_Num_Total":"",
  "Area3_Num_Total":"",
  "Area4_Num_Total":""
}
```

## 6 . List of external I / F specification differences between the version of application

No.	Contents	Supported versions of App	Related chapters
1	Changed the calculation method of "Average number of detected people" which is sent via HTTP from "Round down" to "Rounding".	V1.20 or later	Chapter 2, Chapter 3
2	Corrected the number of people information which is sent via HTTP. Before the changes: Fixed and send the result for the last 24 hours After the changes: Notify the time according to the setting (Example: When the notification interval is set to 5 minutes: The result of the last 5 minutes is sent.)	V1.20 or later	Chapter 2, Chapter 3
3	Fixed an issue where the IP address may be empty which is sent via HTTP.	V1.20 or later	Chapter 2, Chapter 3
4	Fixed the future number of people information not being sent via HTTP when the camera time setting is set back before the current time.	V1.20 or later	Chapter 2, Chapter 3
5	Fixed an issue where the number of people sent via HTTP may be one less than the number that should be sent.	V1.20 or later	Chapter 2, Chapter 3
6	Corrected the time information (list) sent via HTTP from local time to UTC.	V1.20 or later	Chapter 2, Chapter 3
7	Add MAC address and channel number to the information sent via HTTP.	V1.30 or later	Chapter 2, Chapter 3
8	Supports MQTT periodic transmission.	V1.40 or later	Chapter 5