Welcome service robots

SDK Interface documentation

Guest robot SDK interface documentation

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1. documentation overview

This document provides a welcome service robot SDK Interface method for use of third-party manufacturers machine

Who completed an operation corresponding to the needs of various configurations and modes of selection. All interfaces using the communication interface

General support socket with websocket In two ways. This documentation mainly focuses on guidance for the

third party on how to facilitate SDK interface method to complete corresponding operational requirements. All

interfaces are applied with TCP / IP and support general socket and websocket.

2. Detailed Description Interface Description Interface

First, before using the machine connected to the interface 60002 Port (if it is websocket Then use 60001 port). Use both the message body JSON Format data, interface data specific format. Encoding format utf8 . If ordinary socket And parsing the header must be added, then send and receive data, websocket please ignore.

Make sure it connected to port 60002 before using. Message body should be in the format of JSON with the details stated as following. Encoding format is utf8. If it's normal socket, The header must be added and parsed when sending and receiving data. Ignore the websocket.

Header format is as follows: Header format

Data bits Data bits	Data content Data content	Data Definition Data definition
1-4	int: 1	Receiving node Receiving node
5-8	int: 1	The sending node Send node
9-12	int: 1	accept id receiving ID
13 to 16	int: 25	send id send id
17 to 18	short: 1	News id message id
19 to 20	short: 7002	event id event id
21 to 24	Int : Need to calculate need calculation	The transmission data length of the content (not including the header) Send the

		length of this data content (Excluding header)

NOTE: When using big-endian mode transmission, the specific use can refer to demo program. Note: Big-end mode is used for sending Please refer to the demo program for specific usage..

Speech Recognition

2.1. Voice Automatic Speech Recognition

2.1.1. Turn on voice services Start Voice Service

Interface Description Interface Specification

If you want to use the robot voice function, you first need to open the voice service by calling this interface, only It can identify and subsequent semantic functions. Enabled by default. If you want to use the robot's voice function, you must first open the voice service by calling this interface to enable subsequent recognition and semantic functions .Default on

Example request data Request Data Instance

```
{
    "Msg_id": "SPEECH_SERVICE_START_REQ"}
```

Return result example Result Return Instance

```
{
"Error_code": 0,
"Msg_id": "SPEECH_SERVICE_START_RSP"}
```

The results Parameter Description Result Parameter Specification

parameter parameter	Explanation directions	Types of type	Remark remark
error_code	error code error code	Int	0 success succeed

2.1.2. Close Voice Close Voice Service

Interface Description Interface Specification

If you do not use the robot voice function, by calling this interface off voice services.

When there is no need to use voice function, this interface can be occupied to shut down voice service.

Example request data Request Data Instance

```
{
"Msg_id": "SPEECH_SERVICE_STOP_REQ"}
```

Return result example Result Return Instance

```
{
"Msg_id": "SPEECH_SERVICE_STOP_RSP",
"error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter parameter	Explanation directions	Types of type	Remark remark
error_code	error code Error Code	Int	0 success success

2.1.3. Enabling multiple speech recognition Start Multiple Speech Recognition

Interface Description Interface Specification

This interface is opened by calling the robot will stop speech recognition continuous speech recognition, voice communication and a recognition of the results of each push. By calling this interface to enable continuous speech recognition, the robot will continuously perform speech recognition and push each recognized result when communicating.

Example request data Request Data Instance

```
{
    "Msg_id": "SPEECH_ISR_START_REQ"}
```

Return result example Result Return Instance

```
{
   "Msg_id": "SPEECH_ISR_START_RSP"
```

"Error_code": 0}

The results Parameter Description Result Parameter Specification

parameter	Explanation	Types of	Remark
error_code	error code	Int	0 success

2.1.4. Close repeatedly Speech Recognition Close Multiple Speech Recognition

Interface Description Interface Specification

By calling this interface closed continuous speech recognition To stop continuous speech recognition

Example request data Request Data Instance

```
{
    "Msg_id": "SPEECH_ISR_STOP_REQ"}
```

Return result example Result Return Instance

```
{
"Error_code": 0,
"Msg_id": "SPEECH_ISR_STOP_RSP"}
```

The results Parameter Description Result Parameter Specification

parameter	Explanation	Types of	Remark
error_code	error code	Int	0 success

2.1.5. Open a single speech recognition Start Single Speech Recognition

Interface Description Interface Specification

This interface is invoked by a single turn of speech recognition, the recognition result when the robot pushes identify **individual speech segment, speech recognition is complete AC (see 2.1.7) By calling this interface to start a single speech** recognition, the robot recognizes a single speech segment during speech communication, and pushes the recognition result after the recognition is

completed (refer 2.1.7).

Example request data Request Data Instance

```
{
"Msg_id": "SPEECH_ISR_ONCE_START_REQ"}
```

Return result example Result Return Instance

```
{
"Error_code": 0,
"Msg_id": "SPEECH_ISR_ONCE_START_RSP"}
```

The results Parameter Description Result Parameter Specification

parameter	Explanation	Types of	Remark
error_code	error code	Int	0 success

2.1.6. Close single speech recognition Close Single Speech Recognition

Interface Description Interface Specification

This interface is invoked by a single off the speech recognition, it is discarded after not finished off recognized speech segments.

Turn off single speech recognition by calling this interface, and discard unrecognized speech segments when it is closed.

Example request data Request Data Instance

```
{
      "Msg_id": "SPEECH_ISR_ONCE_STOP_REQ"}
```

Return result example Result Return Instance

```
{
      "Msg_id": "SPEECH_ISR_ONCE_STOP_RSP"
   "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter	Explanation	Types of	Remark

error_code	error code	Int	0 success

2.1.7. Speech recognition results reported Recognition Result report

Interface Description Interface Specification

Alone push the speech recognition result to an upper layer Upward push recognition result

Example request data Request Data Instance

Return result example Result Return Instance

```
{
   "Msg_id": "SPEECH_ISR_ONLY_RESULT_NTF"
   "Text": " Recognition to the audience about the content " ,
}
```

2.1.8. Semantic speech recognition result and reports the reporting of speech and Semantics recognition result

Interface Description Interface Specification

To push the upper and the speech recognition result semantics Upward push recognition result

Example request data Request Data Instance

Return result example Result Return Instance

```
{
   "Msg_id": "SPEECH_ISR_LAST_RESULT_NTF" "result": {

   "Text": " Recognition to the audience about the content "
          " answer ": {
              "Type": 0
              "Answer_text": " Content answer "
         }}

    "Data": {
         Original voice format json
```

}

"Error_code": 0}

The results Parameter Description Result Parameter Specification

parameter **Parameter**	Explanation **Description**	Type type	Remark remarks
type	Language type Language Type	int	1. unknown Unknown 2. Chat Chatting
data	Source format		

2.1.9. Text-to-Speech Request TTS Request

Interface Description Interface Specification

Convert text into voice and play. Covert text to voice and play it

Example request data Request Data Instance

```
{
    "Msg_id": "SPEECH_TTS_REQ", "content": " Hello
    there! "
}
```

Request Parameter Description Request Parameter Specification

content need TTS Text Content required TTS

Return result example Result Return Instance

```
{
   "Msg_id": "SPEECH_TTS_RSP"
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter parameter	Explanation description	Types of type	Remark remark
error_code	error code error code	int	0 success success

2.1.10 speech recognition parameters Speech recognition parameter settings

Interface Description Interface Specification

Setting recognition language Set the recognition language

Example request data Request Data Instance

```
{
  "Msg_id": "SPEECH_SET_ISR_PARAM_CMD",
"local_type": "zh_cn"}
```

Request Parameter Description Request Parameter Specification

parameter Parameter Types of type		Explanation Description
local_type	string	The value of the following options: zh_cn (Chinese, default) en_us (English) ja_jp (Japanese) Other country code your own query

Return result example Result Return Instance

2.1.11. TTS parameter settings TTS Setting

Interface Description Interface Specification

Example request data Request Data Instance

```
{
  "Msg_id": "SPEECH_SET_TTS_PARAM_CMD",
  "engine_type": 0, "voice_name": "xiaoyan", "speed": 50,
```

"Pitch": 50,

"rdn": 1}

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
engine_type	engine engine	0 Online online 1 Offline (recommended) offline (suggest) Seiyuu When you select Always online voice actors re-election time parameters, otherwise it will lead to not broadcast the speech Be sure to change the sub-parameter when selecting online sound optimizer, otherwise it will not be able to broadcast voice
voice_name	voice voice	Voice seiyuu name (see the list of speakers) speaker
speed	Speed speed	1-100
pitch	language Tone intonation	1-100
rdn	Digital Type No. type	1 Integer integer Such as "one hundred twenty-three" 2 digital figure Such as "123"

The list of speakers:

Speakers speaker	Dialect type Dialect type	Sound Type voice type	Whether audio is offline offline audio or not
xiaoyan	Mandarin Chinese Mandarin	Young female Young female voice	No not
xiaofeng	Mandarin Chinese Mandarin	Young Boys Young male voice	No not
yufeng	Mandarin Chinese Mandarin	Young Boys Young male voice	No not

yanping	Mandarin Chinese Mandarin	Young female Young female voice	No not
jinger	Mandarin Chinese Mandarin	Young female Young female voice	No not
donaldduck Putonghua	Mandarin	No not cartoon cartoon voice	
baybyxu	Mandarin Chinese Mandarin	No not childish children voice	
nannan	Mandarin Chinese Mandarin	No not childish children voice	
xiaomeng	Mandarin Chinese Mandarin	Young female Young female voice	No not
xiaolin	Taiwan Taiwan Mandarin Putonghua	Young Boys Young male voice	No not
xiaoqian	Then northeast Dongbei dialect	Young female Young female voice	No not
xiaorong	Sichuan dialect Sichuan dialect	Young female Young female voice	No not
xiaokun	Henan words henan dialect	Young female Young female voice	No not
xiaoqiang	Hunan hunan dialect words	Young female Young female voice	No not
xiaomei	Guangdong Guangdong dialect language	Young female Young female voice	No not
dalong	Guangdong Guangdong dialect language	Young female Young female voice	No not
catherine	Pure American English American English	Young female Young female voice	No not
john	Pure American English American English	Young female Young female voice	No not
henry	English English youth Young Girl No not		

		female voice	

Return result example Result Return Instance

no N / A

The results Parameter Description Result Parameter Specification

no N / A

2.1.12 Termination stop voice reading aloud voice

Interface Description Interface Specification

The current robot character in a voice reading aloud long process, this interface terminate the ongoing voice reading by calling. When the robot is in the process of voice reading of long characters, and the ongoing voice reading can be stopped by calling this interface.

Example request data Result Return Instance

```
{
   "Msg_id": "SPEECH_READ_STOP_REQ"}
```

Request Parameter Description Result Parameter Specification

no

Return result example Result Return Instance

```
{
   "Msg_id": "SPEECH_READ_STOP_RSP",
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter **Parameter**	Explanation **Description**	**Types of type**	**Remark remarks**
error_code Current state	Current status	int	0 success success

2.1.13. End-to-speech notification Speech reading end notification

Interface Description Interface Specification

After the voice reading, to the upper end of the push notification (voice reading the manual stop is also triggered by a push message). After speech ends, upward push ending notice (manually stop also works).

Example request data Request Data Instance

no N / A

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance


```
{
"Msg_id": "SPEECH_READ_OVER_NTF"}
```


The results Parameter Description Request Parameter Specification

no N / A

2.1.14. Manual Robot wake microphone Manually wake up the robot microphone

Interface Description Interface Specification

This interface is invoked by the user to wake up the microphone, or wake-up call can also wake up the microphone word, just send once after boot. The user can wake up the microphone by using this interface, or the wakeup word can also wake up the microphone, and only need to send it once after power on.

Example request data Request Data Instance


```
{
"Msg_id": "SPEECH_ISR_MICRO_REQ"}
```


Return result example Request Data Instance


```
{
"Msg_id": "SPEECH_ISR_MICRO_RSP"
"error_code": 0}
```

The results Parameter Description r equest Parameter Specification

parameter Parameter	Explanation Description	Types of type	Remark Remarks
error_code	error code	Int	0 success success

2.1.15 Voice wake notification Voice Control Wake-up Notice

Interface Description Interface Specification

When the voice wakes up (voice wake-up) will be notified on their own message. It will automatically notify when voice function is waken up (or voice control to wake-up / start single or multiple recognition)

ps : When someone wake-up call word, the robot will automatically turn in the direction of wake up, wake up when the robot is in the navigation process will not turn, it will only push messages. When someone calls a wake-up word, the robot will automatically turn to the direction of wake-up. When the robot is awakened during navigation, it will not turn and only push messages.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "SPEECH_ISR_WAKEUP_NTF",
  " wakeType ": 0 ,."
  error_code ": 0
}
```

The results Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Types of type	Remark remark
wakeType	Wake-up	int	0: Manually wake up (optional) 1 : Voice Wake
error_code Current state		int	0 Other successful Error code

2.1.16 Voice exception notification Voice Exception notification

Interface Description Interface Specification

When the voice function abnormalities, will inform its own message. This notice will automatically pop up when there is something problem with voice function.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
    "Msg_id": "SPEECH_ISR_ERROR_NTF",
    " error_code ": 10120}
```

2.1.17. Semantic Query Semantic query

Interface Description Interface Specification

Users can provide their own query text, query semantics. Users can provide their own query text to query the semantics.

Example request data Request Data Instance

```
{
    "Msg_id": "CUSTSERVICE_GET_RESULT_REQ",
    " text ":" to query content "}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
    "Msg_id": "CUSTSERVICE_GET_RESULT_RSP", "result": {
```

"Text": " To query the content of "

"Answer": {

"Type": 0 "answer_text": " Content answer "}}

"Data": {

Original voice format json},

"Error_code": 0}

2.1.18. Hot words hot word upload upload

Interface Description Interface Specification

When certain keywords need to accurately identify, recommend using this feature. This function is recommended when certain keywords need to be accurately identified.

Note: Each upload will be covered with hot words once uploaded, restart the update finished robot. Note: Each upload will cover the last hot word uploaded Please restart the robot after the update..

Example request data Request Data Instance

{

"Msg_id": "SPEECH_SET_USERWORDS_REQ", "words": [" Pangolin

"," robot "," keywords "]

}

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

{

"Msg_id": "SPEECH_SET_USERWORDS_RSP",

"error_code": 0}

2.1.19. Hot word query query hot words

Interface Description Interface Specification

Query current hot words have been uploaded Query currently uploaded hot words

Example request data Request Data Instance

```
{
    "Msg_id": "SPEECH_GET_USERWORDS_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
    "Msg_id": "SPEECH_GET_USERWORDS_RSP", "words": [ " Pangolin
    "," robot "," keywords "],
    "Error_code": 0}
```

2.2. Recognition Face recognition

2.2.1 Open Open video stream video stream

Interface Description Interface Specification

Open interfaces video streaming, sent through the local interface socket Connection, the port number is 60003 . Using the reference method demo . Open the video streaming interface. The interface sends a socket connection and the port number is 60003. Use method can refer to demo.

Just open this interface, the server will continue to have to put video content delivery to the client data jpg Picture Stream: As long as this interface is opened, the server will continuously send the video content to the client The data is jpg image stream.:

Each frame of the picture header is: 0xff , 0xfe , 0xfd , 0xfc , 0xfb , 0xfa , 0xd8 The header of each frame of the picture is: 0xff, 0xfe, 0xfd, 0xfc, 0xfb, 0xfa, 0xd8

Tail of each frame image data is: 0xff , 0xfe , 0xfd , 0xfc , 0xfb , 0xfa , 0xd9 The data end of each frame of the picture is: 0xff, 0xfe, 0xfd, 0xfc, 0xfb, 0xfa, 0xd9

Example request data Result Return Instance

```
{
    "Msg_id": "FACE_DETECT_OPEN_VIDEO_REQ"
```

```
}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
    "Error_code": 0,
    "Msg_id": "FACE_DETECT_OPEN_VIDEO_RSP"}
```

The results Parameter Description Request Parameter Specification

parameter **Parameter**	Explanation **Description**	**Types of type**	**Remark remarks**
error_code Current state		int	0 success

2.2.2. Close shut down video stream video stream

Interface Description Interface Specification

Close video streaming, 60003 Port no longer sends jpg Stream (not actively disconnected server

shut down video streaming, port 60003 will not sends jpg stream (server will not disconnect automatically

Example request data Request Data Instance

```
{
    "Msg_id": "FACE_DETECT_CLOSE_VIDEO_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
    "Error_code": 0,
    "Msg_id": "FACE_DETECT_CLOSE_VIDEO_RSP"}
```

The results Parameter Description Request Parameter Specification

parameter **Parameter**	Explanation **Description**	Types of type	Remark Remarks
error_code Current state		int	0 success

2.2.3. Turn Face Recognition background service Start FR Back-end Service

Interface Description Interface Specification

Face recognition feature is turned on by calling this interface. When turned on, it will automatically push face (see 2.2.9). Reported immediately after opening a face recognition information (2.2.9). This interface is for the boot up of face recognition function, after which will automatically push facial information (refer to 2.2.9). Upon invoking, a face recognition result shall be reported (refer to 2.2.9).

Example request data Request Data Instance

```
{
    "Msg_id": "FACE_DETECT_SERVICE_START_REQ"}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
"Error_code": 0,
"Msg_id": "FACE_DETECT_SERVICE_START_RSP"}
```

The results Parameter Description

parameter **Parameter**	Explanation **Description**	Types of type	Remark Remarks
error_code Current state		int	0 success

2.2.4. Recognition close background services Close FR Back-end Service

Interface Description Interface Specification

By calling this interface After closing face recognition, face detection stop. (Refer to 2.2.11)

Face detection will be ended after shutting this function down (refer to 2.2.11).

Example request data Request Data Instance

```
{
    "Msg_id": "FACE_DETECT_SERVICE_STOP_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Request Parameter Specification

```
{
    "Error_code": 0,
    "Msg_id": "FACE_DETECT_SERVICE_STOP_RSP"}
```

The results Parameter Description Result Parameter Specification

parameter **Parameter**	Explanation **Description**	**Types of type**	**Remark Remarks**
error_code Current state		int	0 success

2.2.5. Camera, camera taking picture

Interface Description Interface Specification

Click pictures or call the following interfaces, complete camera action Click on the camera or call the following interface to complete the camera action

Example request data Request Data Instance

```
{
    "Msg_id": "FACE_SNAPSHOT_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance


```
{
    "Error_code": 0,
    "face_position": 0,
    "File_path": "D: \\ csjusher \\ FaceDetect \\ Face_0.jpg", "msg_id":
"FACE_SNAPSHOT_RESULT_RSP"}
```


The results Parameter Description Result Parameter Specification

parameter **Parameter**	Explanation **Description**	**Types of type**	**Remark Remarks**
file_path	Face picture address Face image address	string	
error_code error code		int	0 It indicates that someone other face expressed no face 0 means faceOthers means no faces

The film was finished photos are stored in the installation directory \\ FaceDetect \\ Face_0.jpg Installation directory by reading a registry, the registry path is: The captured photos are stored in the program installation directory \\ FaceDetect \\ Face_0.jpg The program installation directory can be read through the registry, the registry path is: HKEY_LOCAL_MACHINE \ SOFTWARE \ CsjRobot \ CsjUsher \ InstallDir

2.2.6. Face registration Face registration

Interface Description Interface Specification

By calling this interface (self-maintaining current photographs face name), the current picture, the face registered in the database. You must first perform 2.2.5 After the camera to take pictures and returns the picture there is a face in order to use this feature. By calling this interface (self-maintaining the currently photographed face and name), the face in the current photo is registered in the database. You must use this function after you have first performed the 2.2.5 camera to take a picture and return a face with someone in the picture.

Example request data Request Parameter Specification

{

"Msg_id": "FACE_SAVE_REQ", "name": " Li

and Liang "

}

Request Parameter Description Request Parameter Specification

parameter **Parameter**	Explanation **Description**	Types of type	Remark Remarks
name	Name Registration register name string		

Return result example Result Return Instance

{

"Msg_id": "FACE_SAVE_RSP",

" person_id ":" personx20170107161021mRJOVw "

"Error_code": 0}

The results Parameter Description Result Parameter Specification

parameter **Parameter**	**Explanation Description Types of Type Remark Remarks**		
person_id Face unique identifier	Face uniqueness identifier	string	
error_code	Current state Current state	int	0 success success

2.2.7. Delete face information Delete Face Information

Interface Description Interface Specification

By calling this interface (to be deleted to maintain their own photos Face ID) Delete database information in a human face

Delete a face in the database by calling this interface (self-maintaining need to delete photo face ID)

Example request data Request Data Instance

{

```
  "Msg_id": "FACE_DATA_DEL_REQ"
"person_id": "123456"}
```

Request Parameter Description Result Parameter Specification

parameter	Explanation	Types of	Remark
face_id	human face ID	string	

Return result example esult Return Instance

```
{
  "Msg_id": "FACE_DATA_DEL_RSP"
"error_code": 0}
```

The results Parameter Description

parameter Parameter	Explanation Description	Types of Type	Remark Remarks
error_code Current state	Current state	int	0 success success

2.2.8. Face sensing information reporting Face Induction Report

Interface Description Interface Specification

When someone close to your face close to the camera robot, this message will be automatically pushed when the state changes. (which is person The value of the true Changes to false Or by the false Changes to true When automatic push, do not push other times.) This interface is to induct if there is any face detected nearby the camera and a notice shall be automatically pushed when it changes. That is to say, when a value of a person turns from true to false or reversely, the notice will auto push, while the rest of time it does not work.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

{

"Msg_id": "FACE_DETECT_PERSON_NEAR_NTF", "person":

true}

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
person	Whether there is a face in the vicinity Detect face nearby	

2.2.9. Face Recognition information report Face Recognition Report

Interface Description Interface Specification

Identifying the current robot camera to the face information report (see 2.2.3 , 2.2.4.) Report current face recognition information (refer to 2.2.3, 2.2.4)

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Request Data Instance

{

"Msg_id": "FACE_DETECT_FACE_LIST_NTF",

"face_num": 2, "face_list": [

{

```
            "Face_detect": {
                  "Age": 20,
                "gender": 2,
                "smile": 34},

            "Face_recg": {
                  "Confidence": 94, "name":
                  " Li and Liang "
            }},
{

            "Face_detect": {
                  "Age": 28,
                "gender": 2,
                "smile": 45},

            "Face_recg": {
                  "Confidence": 887,
                  "name": " Qi Xuchuan "
                  " person_id ":" personx20170107161021mRJOVw "
            }}


]}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
face_list	Face List Face list	
face_detect	Face detection information Face detection	
age	age age	
gender	gender gender	0 male 1 female
smile	Smile degree Smile Index	1-100

face_recg	Face Recognition information Face Recognition	
confidence	Similarity Similarity	1-100
name	Character Name Name	

2.2.10. Database Gets Face Face Database Access

Interface Description Interface Specification

By calling this interface (corresponding to a human face msg_id Self-maintenance), the database can be obtained from the corresponding msg_id Face information. By calling this interface (corresponding to face msg_id self-maintenance), face information corresponding to msg_id can be obtained from the database.

Example request data Request Data Instance

```
{
    "Msg_id": "FACE_DATABASE_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
   "Msg_id": "FACE_DATABASE_RSP",
  "data_list": [
        {
            "Id": "asdw1", "name":
          " Li and Liang "
        },
{
            "Id": "gfhdf2", "name":
          " Qi Xuchuan "
        }],
```

"List_num": 2,

" all_num ": 2,

" page_num ": 0}

The results Parameter Description Result Parameter Specification

parameter **Parameter**	Explanation **Description**	**Types of Type**	**Remark Remarks**
list_num	The number of people face list The number of face in the list		Up to 20 human faces information 20 face information most
all_num	Face total sum of faces	int	
page_num	Pages face the current transmission list information, where the number of pages when transmitting face list information	int	Face information is completely transmitted a plurality of times (when the number of faces of people over 20) starts counting from 0 Face information is transmitted multiple times (When the number of faces exceeds 20) counts from 0
id	Face id	string	

2.3 chassis and navigation Chassis and Navigation

2.3.1. Get the current position of get current position

Interface Description Interface Specification

Example request data Request Data Instance

{

"Msg_id": "NAVI_GET_CURPOS_REQ"

```
}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "NAVI_GET_CURPOS_RSP", "x": "0",
 "y": "0", "z": "0", "rotation": "0", "error_code": 0}
```

parameter Parameter	Types of Type	Explanation Description
x, y, z, rotation	String	coordinate coordinate

2.3.2. Chassis move instruction Chassis Mobile Instruction

Interface Description Interface Specification

Manual control of the robot moves Interface Specification

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_ROBOT_MOVE_REQ",
 "direction": 0}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
direction	direction direction	0 before forward 1 Rear backward 2 left turn left 3 right turn right

Return result example Result Return Instance


```
{
  "Msg_id": "NAVI_ROBOT_MOVE_RSP"
 "error_code": 0}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	Current state Current state	0 success success

2.3.3 Specific points navigation Specified Pinpoint Navigation

Interface Description Interface Specification

Point to the target path planning and travel Route planning during walking process towards to targeted point

Example request data Request Data Instance


```
{
   "Msg_id": "NAVI_ROBOT_MOVE_TO_REQ", "pos": { "x": 2,
    "y": 1, "z": 0,


     "Rotation": 30}}
```


Request Parameter Description Request Parameter Specification

parameter	Explanation	Types of	Remark
x	x coordinate coordinate	double	
y	y coordinate coordinate	double	

z	z coordinate coordinate	double	The default is 0
rotation	angle angle	double	

Return result example Result Return Instance


```
{
  "Msg_id": "NAVI_ROBOT_MOVE_TO_RSP",
 "error_code": 0}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	Current state Current state	0 success success

2.3.4. Notify certain point navigation Specified Pinpoint Navigation Notfication

Interface Description Interface Specification

When the robot is called 2.3.3. After a certain point navigation, unless you call 2.3.5 Cancel the move, otherwise it will definitely push this message. When the robot calls a 2.3.3 specific point navigation, this message must be pushed unless 2.3.5 is called to cancel the move.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
   "Msg_id": "NAVI_ROBOT_MOVE_TO_NTF",
 "error_code": 0}
```


The results Parameter Description

parameter Parameter	Explanation	Remark Remarks

	Description	
error_code	Current state current state	0 Successfully reached success

2.3.5. Cancellation particular point navigation Cancel Navigation

Interface Description Cancel Navigation

In navigation (2.4.6) Process, cancel the robot travels In the process of robot's navigation, it will end up its moving ahead.

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_ROBOT_CANCEL_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_ROBOT_CANCEL_RSP",
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	Current state Current state	0 success success Other error code others

2.3.6. Diverted to a specific angle Turn to a Specific Angle

Interface Description Interface Specification

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_GO_ROTATION_TO_REQ", "rotation":
  0}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_GO_ROTATION_TO _RSP",
  "error_code": 0}
```

2.3.7. Step angle step angle

Interface Description Interface Specification

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_GO_ROTATION_REQ", "rotation":
   0

}
```

Request Parameter Description Request Parameter Specification

Rotation> 0: turn left turn left , Rotation <0: turn right turn right

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_GO_ROTATION _RSP",
   "error_code": 0
```

}

2.3.8. Back to the charging point Back charge point

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "NAVI_GO_HOME_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_GO_HOME _RSP",
  "error_code": 0}
```

2.3.9. Set the current movement speed Set the current speed

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "NAVI_ROBOT_SET_SPEED_REQ" ,
    "Speed": 0.5}
```

Request Parameter Description Request Parameter Specification

parameter	Explanation	Types of	Remark
speed	error code	double	0.1-0.7, default 0.5

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_ROBOT_SET_SPEED_RSP",
   "error_code": 0
```

}

2.3.10. Get the current movement speed Get Current Movement Speed

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "NAVI_ROBOT_GET_SPEED_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_ROBOT_GET_SPEED_RSP", "speed":
   0.5, "error_code": 0}
```

parameter Parameter	Explanation Description	Types of Type	Remark Remarks
speed	error code	double	0.1-0.7, default 0.5

2.3.11 The memory map save the map

Interface Description Interface Specification

use sdk Formal call to store map store the map by sdk

Example request data Request Data Instance

```
{
    "Msg_id": "NAVI_GET_MAP_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
```

```
  "Msg_id": "NAVI_GET_MAP_RSP",
 "error_code": 0}
```

2.3.12. Load map Loading the map

Interface Description Interface Specification

use sdk Formal call to load the map loading the map by sdk

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_SET_MAP_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
  "Msg_id": "NAVI_SET_MAP_RSP",
 "error_code": 0}
```

2.3.13. Map Initialization Status Map initialization status query

Interface Description Interface Specification

It used to determine whether or not to call too 2.3.12 Loading map instructions. Used to determine whether or not to call 2.3.12 load map instructions.

Example request data Request Data Instance

```
{
   "Msg_id": "NAVI_GET_MAPSTATUS_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
```

"Msg_id": "NAVI_GET_MAPSTATUS_RSP", "state":
true, "error_code": 0}

parameter Parameter	Explanation Description	Types of type	Remark Remarks
state	Determine whether the information has been initialized map	bool	

2.3.14. Navigation Status Navigation Status Query

Interface Description Interface Specification

Query the current navigation state. Query the current navigation status.

Example request data Request Data Instance

```
{
  "Msg_id": "NAVI_GET_STATUS_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "NAVI_GET_STATUS_RSP", "state": 0,
 "error_code": 0}
```

Return Parameters Description Result Parameter Specification

parameter Parameter	Explanation Description	Types of type	Remark Remarks
status	Navigation state navigation status	int	0: idle free 1: Navigating navigating

2.3.15 Navigation mode is set to Navigation Mode Settings

Interface Description Interface Specification

Set navigation mode. Set navigation mode

Obstacle avoidance mode: will bypass the obstacles, this default mode Obstacle Avoidance Mode: Obstacles will be bypassed, this mode default

Given failure modes: walking along virtual tracks, obstacle will stop until the barriers left. Fixed obstacle mode: Walking along the virtual track, when meet obstacles the robot will stop until obstacles leave.

Example request data Request Data Instance

```
{
    "Msg_id":. "NAVI_SET_MODE_REQ" "mode":
 0}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
   "Msg_id": "NAVI_SET_MODE_RSP",
 "error_code": 0}
```

Return Parameters Description Result Parameter Specification

parameter Parameter	Explanation Description	Types of	Remark Remarks
mode	Navigation state navigation status	int	0: Obstacle avoidance mode, the default Obstacle Avoidance Mode, default 1: Given failure modes (walking along virtual tracks) Fixed obstacle mode: Walking along the virtual track

2.4. Upper panel (Welcome) Upper Body Control Board (Alice)

2.4.1. Robotic limb operation command Limb Operation

Interface Description Interface Specification

Control robot upper limb Control robot's upper body

Example request data

```
{
    "Msg_id": "ROBOT_BODY_CTRL_CMD",
   "body_part": 3, "action": 2}
```

Request Parameter Description Request Data Instance

action action	body_part	action
Bow bow	2	6
look up look up	2	5
Turn left head Turn left	2	2
Turn right head turn right	2	3
Head back to the middle level Head level back to the middle	2	4
Left arm lift Raise left arm	3	2
Put the left arm Put down left arm	3	3
Lift right arm Raise right arm	4	2
Put right arm Put down right arm	4	3

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

2.4.2. Robotic limb operation is complete notification Robot Body Operation Completion Notification

Interface Description Interface Specification

Control robot notification of completion of upper limb Notification of Control the completion of the upper limb of the robot

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
    "Msg_id": "ROBOT_BODY_CTRL_NTF",
  "body_part": 7, "body_motion": 3, "error_code": 0}
```


The results Parameter Description Result Parameter Specification

To reach the joint limit **Position the joint to reach**	body_part	body_motion
Head: upper limit head: up position	2	6
Head: Lower limit head: down position	2	5
Head: left limit head: left position	2	2
Head: Intermediate stop head: middle position	2	4
Head: right limit head: right position	2	3
Left arm: upper limit left arm: up position	3	2
Left arm: lower limit left 3		3

arm: down position		
Left: upper limit left hand: up position	6	2
Left: Lower limit left hand: down position	6	3
Right arm: upper limit right arm: up position	4	2
Right arm: lower limit right arm: down position	4	3
Right: upper limit right hand: up position	7	2
Right: Lower limit right hand: down position	7	3

parameter Parameter	Explanation Description	Types of type	Remark Remarks
body_part	Body parts	int	
body_motion	Limb motor	int	
error_code	Current state	int	0 Success was not arrived at the designated location

2.4.3. Robot waved around open Robot swings left and right

Interface Description Interface Specification

Robot waved around the beginning of the cycle, know so far received close The robot starts swinging left and right until it is closed

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_ARM_LOOP_START_REQ",
  "interval_time": 1500}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Types of Type	Explanation Description

interval_time	int	Waving Wing interval interval

Return result example Result Return Instance


```
{
    "Msg_id": "ROBOT_ARM_LOOP_START_RSP"}
```


The results Parameter Description Result Parameter Specification

2.4.4. About robot waved stop Robot Stops swing Left and Right

Interface Description Interface Specification

Waving robot stops circulating around stop swing left and right

Example request data Request Data Instance


```
{
    "Msg_id": "ROBOT_ARM_LOOP_STOP_REQ"}
```


Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
    "Msg_id": "ROBOT_ARM_LOOP_STOP_RSP"}
```


2.4.5. Open dancing robot dancing robot

Interface Description Interface Specification

Robot starts to dance until you receive close up The robot starts dancing until it is closed

Example request data Request Data Instance


```
{
```

"Msg_id": "ROBOT_DANCE_START_REQ"}

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

{

"Msg_id": "ROBOT_DANCE_START_RSP"}

The results Parameter Description Result Parameter Specification

2.4.6. Robot dancing robot dancing stop stop

Interface Description Interface Specification

Stop dancing robot robot dancing stop

Example request data Request Data Instance

{

"Msg_id": "ROBOT_DANCE_STOP_REQ"}

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

{

"Msg_id": "ROBOT_DANCE_STOP_RSP"}

The results Parameter Description Result Parameter Specification

2.5. Upper panel (snow) Upper Body Control Board (snow)

2.5.1. Robotic limb operation command Limb Operation

Interface Description Interface Specification

Control robot upper limb Control robot's upper body

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_BODY_CTRL_CMD",
  "body_part": 1, "action": 2}
```

Request Parameter Description Request Parameter Specification

action action	body_part	action (Swing number, swing times <= 20 Times)
Right arm swing right arm swing	1	1
Left arm swing left arm swing	2	1
Arms swinging both arms swing	3	1

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

2.5.2 The head touching reported Head touch reporting

Interface Description Interface Specification

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
    "Msg_id": "ROBOT_BODY_TOUCH_NTF",
```

"Error_code": 0}

The results Parameter Description Result Parameter Specification

2.5.3. Robot waved around open Robot swings left and right

2.5.4. Waving around stop stop swings left and right

2.5.5. Dancing open start dancing

2.5.6. Stop stop dancing dancing

With more than welcome. Same as Alice

2.6. Upper panel (room) Upper Body Control Board

2.6.1. Hand touch hand touch report report

Interface Description Interface Specification

When someone robot hands touch the room, it sends this message with 2.5.2

When someone touches the delivery robot hands, it will be report, same as 2.5.2

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
    "Msg_id": "ROBOT_BODY_TOUCH_NTF",
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

2.6.2. Obstruction push Obstacle Blocking Push

Interface Description Interface Specification

When someone blocks a robot or leave robot will push this message. This message is pushed when someone blocks the robot or leaves the robot.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "DEVICE_DETECT_BARRIER_NEAR_NTF", "state": 0,
 "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
state	Whether there is an obstacle ahead	0: no 1: Have

2.7 peripherals (optional) Peripheral

Turn on the printer Printer Dump (PRD)

2.6.3.

Interface Description Interface Specification

Open the printer interface, to use the printer, you must send this message Open the printer interface. To use the printer, this message must be sent

Example request data Request Data Instance

```
{
    "Msg_id": "PRINTER_OPEN_CMD"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

2.6.4. The printer prints start printing

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "PRINTER_PRINT_TEXT_CMD", "text":
  "This is a test."}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
text	Printed characters characters	

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

2.6.5. The printer cutter Printer Cutter

Interface Description Interface Specification

Example request data Request Data Instance

```
{
```

"Msg_id": "PRINTER_PAPER_CUT_CMD"}

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

The results Parameter Description Result Return Instance

no N / A

2.6.6. Print Picture photo print

Interface Description Interface Specification

Example request data Request Data Instance

```
{
   "Msg_id": "PRINTER_PRINT_IMG_CMD", "img":
  "base64"}
```

Request Parameter Description Request Parameter Specification

parameter parameter	Explanation description	Remark remarks
img	Base64 Format images	

Return result example

Result Return Instance

The results Parameter Description Result Parameter Specification

no N / A

2.6.7. Print two-dimensional code Printing QR Codes

Interface Description Interface Specification

Example request data Request Data Instance

```
{
   "Msg_id": "PRINTER_PRINT_QRCODE_CMD", "qrcode":
  "www.csjbot.com"}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
qrcode	To turn into a two-dimensional code symbol String, stringString to be converted into QR code	

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

no

2.6.8. Printing exception notification printing abnormal notification

Interface Description Interface Specification

When the printer will automatically push abnormal When the printer is abnormal, it will be automatically pushed

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
   "Msg_id": "PRINTER_ERR_NTF",
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

no N / A

2.6.9. Identity information to start scanning Starting ID Card Information Scan

Interface Description Interface Specification

Example request data Request Data Instance

{
"Msg_id": "IDCARD_START_SCAN_CMD"}

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

no N / A

2.6.10 The end ID card scanned Ending ID Card Information Scanning

Interface Description Interface Specification

Example request data Request Data Instance

{
"Msg_id": "IDCARD_STOP_SCAN_CMD"}

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

no N / A

2.6.11. ID information push Identity Card Information Push

Interface Description Interface Specification

When the device ID, the push message Push this message when there is an ID device

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
    "Msg_id": "IDCARD_INFO_NTF", "detail":
    {
        "Name": " Lee and bright "
        "Sex": 1, "nation": " Chinese",

        "Address": " Kunshan City, Jiangsu Province pangolin robot "
        "Id": "123456789123456789", "depart": " Kunshan
        Municipal Public Security Bureau "
        "Birth": {
            "Year": 1990,
            "month": 7, "day":
            7},

        "Effective_date": {
            "Year": 2010,
            "month": 7, "day":
            7},

        "Expire_date": {
            "Year": 2020,
            "month": 7,
            "day": 7
```

}}

"Error_code": 0}

The results Parameter Description Result Parameter Specification

parameter Parameter	Types of Type	Explanation Description	Remark Remarks
name	string	Full name	
sex	int	gender	1: 0 male: female
nation	string	Family name	
address	string	address	
id	string	identification number	
depart	string	Issuing authority	
birth	int	date of birth	
effective_date	int	ID Effective Date	
expire_date	int	ID card expiration date	

2.7. Configuration information Configuration Information

2.7.1. Configuring the Speaker Volume Configuring Speaker Volume

Interface Description Interface Specification

Example request data Request Data Instance

{

"Msg_id": "SET_VOLUMEPARAM_CMD", "volume":

35}

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
volume	volume	0-100

Return result example Result Return Instance

{

"Msg_id": "SET_VOLUMEPARAM_RSP"

"error_code": 0}

The results Parameter Description Result Parameter Specification

parameter Parameter	Types of Type	Explanation Description	Remark Remarks
error_code	int	error code	0 success

2.7.2. Get the speaker volume Acquiring speaker volume

Interface Description Interface Specification

Example request data Request Data Instance

{

"Msg_id": "GET_VOLUMEPARAM_REQ"}

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

{

"Msg_id": "GET_VOLUMEPARAM_RSP"

"system_volume": 55, "cache_volume": 55,

"error_code": 0}

The results Parameter Description Result Parameter Specification

parameter Parameter	Types of Type	Explanation Description	Remark Remarks
system_volume	int	The current system volume 0-100	

		speaker volume	
cache_volume	int	Volume information on a set of Last set volume information	0-100
error_code	int	error code error code	0 success

2.7.3. Configure the microphone volume Configuring Microphone Volume

Interface Description Interface Specification

Received for adjusting the microphone volume Used to adjust the volume received by the microphone

Example request data Request Data Instance

```
{
    "Msg_id": "SET_MICRO_VOLUME_REQ", "volume":
35}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
volume	volume volume	0-100

Return results shown

example Result Return Instance

```
{
    "Msg_id": "SET_MICRO_VOLUME_RSP"
"error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Types of model	Explanation Description	Remark Remarks
error_code	int	error code	0 success success

2.7.4. Get the microphone volume Getting the microphone volume

Interface Description Interface Specification

For obtaining received microphone volume Used to get the volume received by the microphone

Example request data Request Data Instance

```
{
    "Msg_id": "GET_MICRO_VOLUME_REQ"}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks

Return results shown example

```
{
"Msg_id": "GET_MICRO_VOLUME_RSP", "volume":
35 "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Types of Type	Explanation Description	Remark Remarks
volume	int	volume	0-100
error_code	int	error code	0 success success

2.7.5. Get the version number Obtaining the Version Number

Interface Description Interface Specification

Gets the version number of the underlying service Get the underlying service version number

Example request data Request Data Instance

```
{
    "Msg_id": "GET_VERSION_REQ"}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
    "Msg_id": "GET_VERSION_RSP"
  "version": "V1.0.0"}
```

The results Parameter Description Result Parameter Specification

2.7.6 Obtaining foreign language speech recognition Getting Foreign Voice Recognition Keys

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "GET_SPEECH_MICROSOFT_REQ"}
```

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance

```
{
    "Msg_id": "GET_SPEECH_MICROSOFT_RSP", "key":
  "12345678"}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Types of Model
key	**key**	String

2.7.7. Setting foreign language voice recognition key Setting Foreign Language Voice Recognition Keys

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "SET_SPEECH_MICROSOFT_CMD", "key":
  "12345678"}
```

Request Parameter Description Request Parameter Specification

parameter Parameter	Explanation Description	Types of model
key	key	String

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

2.8 Other commands other command

2.8.1. Heartbeat request heartbeat request

Interface Description Interface Specification

Example request data Request Data Instance

```
  {
    "Msg_id": "HEART_BEAT_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
  {
    "Msg_id": "HEART_BEAT_RSP"}
```

The results Parameter Description Result Parameter Specification

2.8.2. Robot Robot power acquisition power acquisition

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_GET_BATTERY_REQ"}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance

```
{
    "Battery": 61,
    "error_code": 0,
    "Msg_id": "ROBOT_GET_BATTERY_RSP"}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
battery	battery power battery power	percentage percent

2.8.3. Robot emergency stop acquiring Robot Emergency Stop Status Acquisition

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_GET_EMERGENCY_CMD"}
```

Request Parameter Description Request Parameter Specification

no

Return result example Result Return Instance


```
{
"Status": 1,
"error_code": 0,
"Msg_id": "ROBOT_GET_EMERGENCY_NTF"}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Types of Type	Remark Remarks
status	Emergency stop Emergency Stop Status	int	1 : Has been pressed pressed 2 : Not pressed unpressed

2.8.4. Robot emergency stop push Robot Emergency Stop Push

Interface Description Interface Specification

When the robot emergency stop button or when a state change initiative to check the emergency stop state, this will automatically push the message.

When the state of the robot emergency stop button changes or when the emergency stop status is actively queried, this message is automatically pushed.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance


```
{
"Status": 1,
"error_code": 0,
"Msg_id": "ROBOT_GET_EMERGENCY_NTF"}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Types of Type	Remark Remarks
status	Emergency stop Emergency Stop Status	int	1 : Has been pressed pressed 2 : Not pressed unpressed

2.8.5. Obtaining state of charge of the robot Robot Charge Status Acquisition

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_GET_CHARGE_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "ROBOT_GET_CHARGE_RSP" "charge":
  0,
  "Error_code": 0
}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
charge	Battery state of charge charging status	0: Not charging charging 1: Charging uncharging

2.8.6. Robot state of charge of the push Robot Charge Status Push

Interface Description Interface Specification

When the state of charge is changed, this will push message Push this message when the charging status changes

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
   "Msg_id": "ROBOT_CHARGE_STATE_NTF"
   "charge_state": 0,
   "Error_code": 0
}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
charge_state	Battery state of charge battery charge status	0: Not charging charging 1: Charging uncharging 2: When the battery is fully charged (fully charged every 30 Send seconds) Power is full (Send every 30 seconds when fully charged)

2.8.7. Human detection robot Robot Human Detection Push Push

Interface Description Interface Specification

When the robot detects the arrival of people, or people leave, will push this message, it is necessary to note that this message 2.2.8 Different face report sensing information, the message is a plurality of sensors integrated conclusions, and 2.2.8 It is directed to a separate camera. When the robot detects the arrival of a person, or when the person leaves, this message is pushed. It should be noted that this

message is different from the reporting of 2.2.8 face-sensing information. The message is a result of integrating multiple sensors, and 2.2. 8 is for the camera alone.

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "DEVICE_DETECT_PERSON_NEAR_NTF", "state": 0,
 "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
state	Does anyone in front there's person or not	0: no one yes 1: Someone no

2.8.8. Robot robot shutdown shutdown

Interface Description Interface Specification

Robot will 5 Seconds after shutdown Robot will shut down after 5 seconds

Example request data Request Data Instance

```
{
  "Msg_id": "ROBOT_SHUTDOWN_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
  "Msg_id": "ROBOT_SHUTDOWN_RSP"
```

```
}
```

The results Parameter Description Result Parameter Specification

2.8.9. Robot restart Restart the robot

Interface Description Interface Specification

Robot immediately restart restart the robot immediately

Example request data Request Data Instance

```
{
    "Msg_id": "ROBOT_REBOOT_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
    "Msg_id": "ROBOT_REBOOT_RSP"}
```

The results Parameter Description Result Parameter Specification

2.8.10. Message broadcasting

Interface Description Interface Specification

Broadcast a message to all the people connected to the robot Broadcast messages to all connected robots

Example request data Request Data Instance

```
{
"Msg_id": "ROBOT_DISPATCH_REQ",
"msg_body":
    {
        "Msg_id": "To forward a message id" ......}.
```

}

Request Parameter Description Request Parameter Specification

parameter Parameter Explanation Description		Remark Remarks
msg_body	Forwarded to content message	Please msg_id and other content to be forwarded completed Please complete the msg_id of the content to be forwarded

Return result example Result Return Instance

The results Parameter Description Result Parameter Specification

Additional Parameters Additional parameters Specification

And two special PC interface communication req

Continue guide:

```
{
  "Msg_id": "ROBOT_DISPATCH_REQ",
  "Msg_body":
      {
          "Msg_id": " NAVI_CONTINUE_GUIDE_ REQ "
      }}
```

Pause guide:

```
{
  "Msg_id": "ROBOT_DISPATCH_REQ",
  "Msg_body":
      {
          "Msg_id": " NAVI_PAUSE_GUIDE_ REQ "
      }}
```

2.9. Setting expressions setting expression

2.9.1. Setting Setting facial expressions facial expressions

Interface Description Interface Specification

Note: Room does not support robot once with time Options, fill default 0 It can, and only supports the robot room laughing 5003 ,cry 5001 ,angry 5005 Expression, the default is to laugh. Remark: The Amy does not support the option of " once " and " time . " The default is 0, and Amy only supports laughing 5003, crying 5001, angry 5005, and the default is laughing.

Example request data Request Data Instance


```
{
    "Msg_id": "SET_ROBOT_EXPRESSION_REQ",
  "expression": 5003, "once": 1, "time": 0}
```


Request Parameter Description Request Parameter Specification

parameter Parameter	**Explanation** **Description**	**Remark Remarks**
expression	Expression selecting, int Expression selection	**5000: happy happy 5001 :sad sad 5002 : Surprised surprise 5003 :smile smile 5004 :ordinary normal 5005 :pissed off angry**
once	If only played once and cut back normal expression, int Whether switch back normal expression after play once	**1: Yes yes 0: no** no
time	Time to play, time to switch back to the default **normal expression, int (with once Parameters conflict, use only one) Play by time,**	**0 :Not enabled do not use** Other: milliseconds other: millisecond

	back to normal expression when to default time, int (Conflicts with the once parameter, only one can be used)	

Return result example Result Return Instance


```
{
    "Msg_id": "SET_ROBOT_EXPRESSION_RSP",
  "expression": 5003, "error_code": 0}
```


Return parameter example Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	error code, int	0: normal normal
expression	The current expression, int	5000: happy 5001 :sad 5002 : Surprised 5003 :smile 5004 :ordinary 5005 :pissed off

2.9.2. Get the current facial Get Current Facial Expressions

Interface Description Interface Specification

Note: Room does not support robot will not work for Amy

Example request data Request Data Instance


```
{
    "Msg_id": "GET_ROBOT_EXPRESSION_REQ"}
```


Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
   "Msg_id": "GET_ROBOT_EXPRESSION_RSP",
  "expression": 5003, "error_code": 0}
```


Return parameter example Result Parameter Specification

parameter **Parameter** Say	Bright **Description**	Remark **Remarks**
error_code	error code, int	0: normal normal
expression	The current expression, int	5000: happy happy 5001 :sad sad 5002 : Surprised surprise 5003 :smile smile 5004 :ordinary normal 5005 :pissed off angry

2.9.3. Update update facial expression facial expressions

Interface Description Interface Specification

Now according to the current robot sn To update the expression, Note: Room does not support robot Immediately update the expression based on the current robot sn, Note: can not use for Amy robot

Example request data Request Data Instance


```
{
      "Msg_id": "UPGRADE_ROBOT_EXPRESSION_REQ"}
```


Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
   "Msg_id": "UPGRADE_ROBOT_EXPRESSION_RSP", "error_code":
  0}
```


Return parameter example Result Return Instance

2.10. Software Update Software Update Interface Interface

2.10.1. Check the software version Software version check

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "UPGRADE_CHECK_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance

```
{
   "Msg_id": "UPGRADE_CHECK_RSP"
  "error_code": 0}
```

The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	error code	0 success success Other failure other failure

2.10.2. The full amount of software updates Software Update

Interface Description Interface Specification

Example request data Request Data Instance

```
{
    "Msg_id": "UPGRADE_TOTAL_REQ"}
```

Request Parameter Description Request Parameter Specification

no N / A

Return result example Result Return Instance


```
{
  "Msg_id": "UPGRADE_TOTAL_RSP"
 "error_code": 0}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
error_code	error code error code	0 success success Other failure other failure

2.10.3 Software update Software update progress report progress report

Interface Description Interface Specification

Software with new progress report oftware update progress report

Example request data Request Data Instance

Request Parameter Description Request Parameter Specification

Return result example Result Return Instance


```
{
   "Msg_id": "UPGRADE_PROGRESS_NTF",
  "download_progress": 56, "error_code": 0}
```


The results Parameter Description Result Parameter Specification

parameter Parameter	Explanation Description	Remark Remarks
download_progress Percentage	progress now percent of	

	progress	
error_code	error code	0 success success Other failure other failure

3. The call flow from the example call flow distance example

3.1 Voice verbal exchanges process Voice Response Process

1. Open voice services, call 2.1.1. (Open only once) Turn on voice service, call 2.1.1 (just open once)

Program 1 : plan 1:

2. turn on Multiple speech recognition 2.1.3Open multiple speech recognition 2.1.3

3. wait 2.1.7 or 2.1.17 Speech recognition and content of the answer Wait for 2.1.7 or 2.1.17 voice recognition content

and answer

4. Pick the answer, call 2.1.8 tts Text-to-speech Get the answer and call 2.1.8 tts text to speech

5. cycle 3,4 step Cycle step 3 and 4

Program 2 : Plan 2

2. turn on Single Speech Recognition 2.1.5Turn on single speech recognition 2.1.5

3. wait 2.1.7 or 2.1.17 Speech recognition and content of the answer Wait for 2.1.7 or 2.1.17 voice recognition content

and answer

4. Pick the answer, call 2.1.8 tts Text-to-speech Get the answer and call 2.1.8 tts text to speech

5. cycle 2,3,4 step Cycle step 2,3 and 4

Single and multiple voice voice difference: the difference of single voice and multiple voice:

Can not be interrupted by a single voice, the voice may be interrupted a plurality of times, such as when tts When playing a piece of content,

In the case of multiple voice, this time to speak and a robot, the robot will immediately push content to identify and answer; in the case of a single voice, the robot open again unless it receives a single speech recognition, or not

We will push. A single voice can not be interrupted, and multiple voices can be interrupted. For example, when tts plays a certain piece of content, in the case of multiple voices, when speak to the robot, it will immediately recognize the content and answer. In the case of a single voice, the robot will not push unless it receives a single speech recognition again.

3.2. Face Face Registration Process Registration Process

1. Open face recognition background service, then automatically push information face (just turn it on again) Turn on face recognition background service, automatically push face information (only need to turn on once)

2. transfer 2.2.5 Pictures, when error_code for 0 When the camera successfully, otherwise must call this interface again.

Call 2.2.5 to take a picture. When the error_code is 0, the picture is taken successfully. Otherwise, the interface must be called again.

3. transfer 2.2.6 Face registration, registrants face Call 2.2.6 face registration, registered face

3.3. Face recognition processes Face Recognition Process

1. Open face recognition background service (open only once) Turn on face recognition background service (just once)

2. When someone close to the camera, first push 2.2.8 Face sensing information reporting, followed by push 2.2.9 people Face recognition information reported, At this point the field "Person" for true When someone is close to the camera, first push 2.2.8 face-sensing information to report, and then push 2.2.9 face recognition information to report. The field " person " It is true at this time.

3. When the robot sight no one about 5 Or so seconds, will push 2.2.8 Face sensing information reporting, But this time the field "Person" for false When there is no

person in the robot's sight for about 5 seconds, 2.2.8 face detection information is also reported, but the field " person " It is false at this time.

3.4 Navigation Navigation Process Process

1. First with a sweeping view of the mobile robot software to the target location, and then call to get the coordinates of the target location point 2.3.1. , Record it x , y , rotation Information First use the map software to move the robot to the target location, and then call the target point coordinate point 2.3.1 to record the x, y, and rotation information.

2. Had been using previously recorded coordinate data, moving to the target position 2.3.3 Use the previously recorded coordinate data to move to the target position 2.3.3.

3.5. Load Loading Map Process Map Process

1. take robotstudio Scanned maps use robotstudio to scan the map

2. transfer 2.3.11 Map into memory upload saved map 2.3.11

3. Call each boot 2.3.12 Loading map. Call 2.3.13 to load the map each time turn on the robot

4. Error code query error code

error code error code	significance description
0	Normal, error-free normal, no false
- 1	Abnormal, general-purpose error, the current instruction json call fails abnormal, General-purpose error, failed to call the current json instruction failed
10001	Voice service is not open Voice service is not turned on

10002	Voice is on Voice service is turned on
10003	Microphone already in the recording mode The microphone is in recording
10004	Synthesis of failure Failed to synthesize tts tts
10005	A microphone device is not detected No microphone device detected
10006	Speaker is not detected No speakers detected
10111	Voice uninitialized Voice is not initialized
10112	Voice initialization failed Voice initialization failed
10113	Voice memory Voice memory overflow overflow
10114	Voice network timeout Voice network timeout
10115	Voice file open failed Voice file failed to open
10116	Voice speakers Model No voice speaker model found not found
10117	Lack of voice memory request Insufficient voice memory request
10118	Voice data read failure Voice data read failed
10119	No query No query semantics to semantics
20001	Navigation board Navigation board connection failed connection failure
20002	Navigation request timeout Navigation request timed out
20003	Navigate to the destination steering failure Failed to navigate to destination
20004	Planning path fails, the failure to reach the target point Failed to plan the path and failed to reach the target
20005	Has saved map No saved map found not found
20005	In the navigation has been under navigation
21000	Navigation abnormal, please check the target point is reachable Navigation is abnormal, please check if the target point is reachable
30001	Server json parse error Server json parsing error
30002	Server Status The server status is abnormal abnormal
30003	Server request timeout Server request timeout
40001	Face storage failure; failure like gripping eigenvalue Failed to save face; failed to grab feature value, etc.
40002	The face has been registered The face is already registered

40003	Face Name malformed Face name format is wrong
50001	PC number does not exist sn The upper computer sn number does not exist
50002	No storage robot Robot is not in storage
60001	Failed to get the version Failed to get version
60002	We have the latest version of the latest version

5. Appendix Appendix

Message suffix Suffix	significance Meaning
_REQ	Indicates that the request (req uest) General and RSP In pairs Stands for request, usually paired with RSP
_RSP	It indicates the response (r e sp onse) General and REQ In pairs Stands for response, usually paired with REQ
_CMD	Representing instructions (c o m man d) , The instruction will not necessarily reply Stands for command, does not always get response
_NTF	A notification (n o t i f y) , Messages are mainly used to push the bottom Stands for notify, mainly for push bottom notification