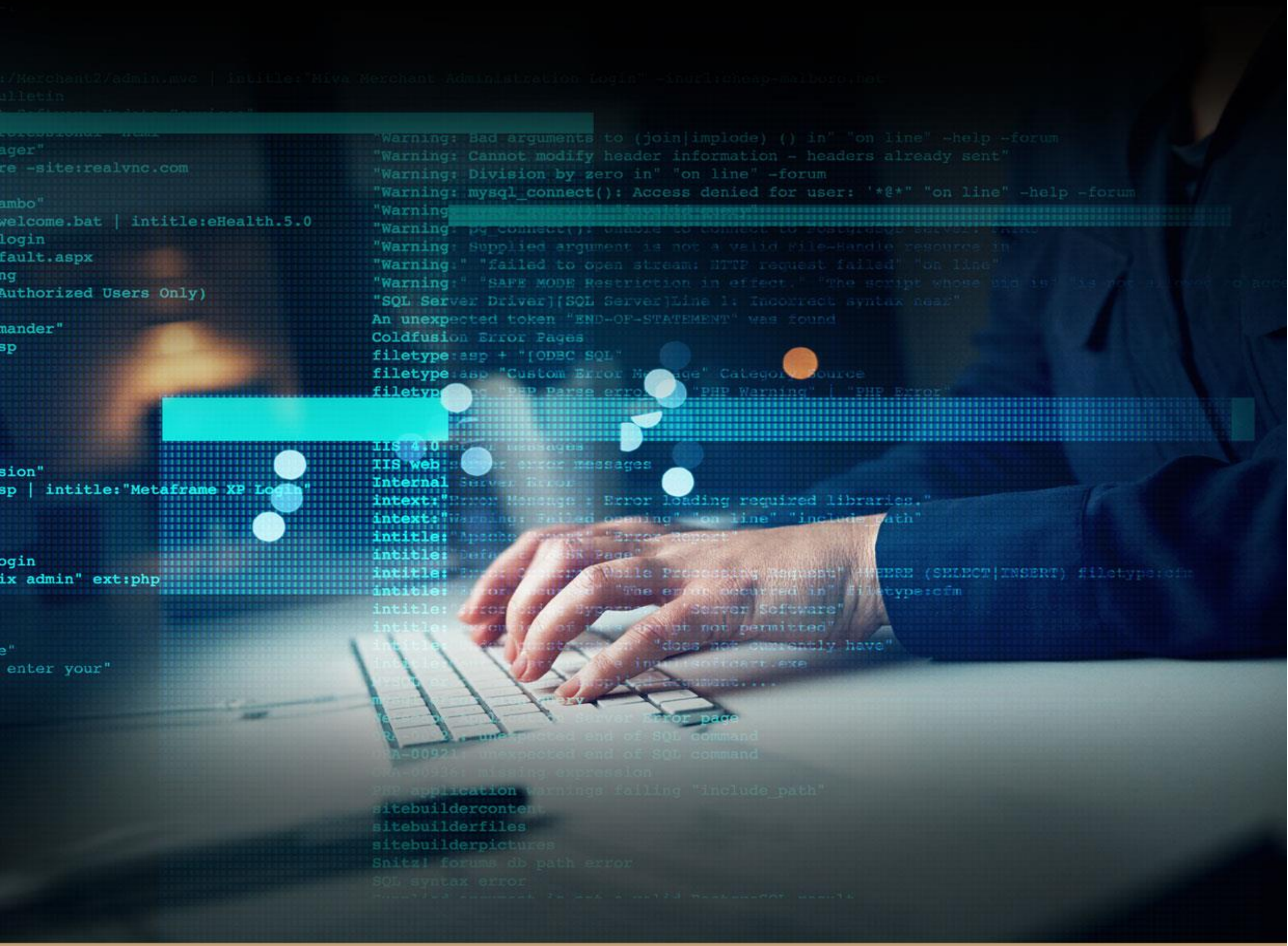
ADAPTIVE RECOGNITION

AUTOMATIC NUMBER PLATE RECOGNITION

Programmer's Guide

Carmen®Go Data Stream Output SDK



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1. INTRODUCTION

This document helps you create the various SDKs required to handle the Event Data Interface of CARMEN® GO software.

2. DESCRIPTION OF CARMEN® GO DATA INTERFACE

CARMEN® GO transmits an event data package through the data output for each license number detection, if it is activated. The data packages consist of two parts: a property descriptor that is transmitted in a compressed picture that contains the image of the event in JPEG format.

Event data includes the following information:

- Video source ID *(sourceId) [integer, 32bit]:*
  This is the position number of the video source in which the license plate number was identified.
- Timestamp *(timestamp) [unsigned integer, 64bit]:*
- Point of time when the frame was received. It is given according to the Epoch / Unix time and is corrected for local time.
- License plate number *(plateText) [C string, ASCII encoding]:*
- License plate number: the actual characters detected on the frame.
- License plate country code *(plateType) [C string, ASCII coding]:*
- Identifies the country / region where the license plate is used, based on the format / characteristic of the license number.
- License number State Code - if available *(plateState) [string, ASCII encoding]:*
- Identifies the State or Region within the country where the license plate is used, based on the format / characteristic of the license number.
- Image size *(image number) [integer, 32bit]:*
  The compressed size of the source frame in bytes and in compressed JPEG data.
- Image data *(byte array):*
  Compressed image data is created based on the JPEG data size.

The data channel for receiving events is based on the primary IP address which runs CARMEN® GO, via the service port configured on CARMEN® GO web interface.

Example

It is running on a computer with an IP address of 192.168.1.15 in a local area network where CARMEN® GO 23 port is configured with the following client socket:

protokoll:	TCP
IP-cím:	192.168.1.15
port:	23

3. CARMEN® GO C LANGUAGE SDK SOFTWARE DEVELOPMENT KIT API

Required files for C LANGUAGE SDK API development:

- *carmengo_clib.h*
  This header file contains the function statements used by the API.
- *libcarmengo_capi.dll*
  This file contains the CARMEN GO API runtime code. This file is required for the program which use CARMEN GO API at runtime.
- *libcarmengo_api.dll.a*
  This statically linked import library file provides runtime loading of exported methods in libcarmengo_api.dll.

The structure of the event data structure used in C API (CMGO_DATACHANNEL_READ_RESULT):

- source_id: video source ID
- timestamp: frame time stamp
- plate_text: license plate with UTF-8 character encoding
- plate_type: nationality code country code
- jpeg_size: frame size in bytes
- jpeg_data: frame binary data (JPEG)

First, use the *cmgo_create_datachannel* method to initialize a new data channel with the desired connection data (the CARMEN GO IP address + data interface port number). The IP address must be entered in [0-255]. [0-255]. [0-255]. [0-255] (e.g. 192.168.1.15). When entering correct data, the recovered *handle* represents the CARMEN GO data interface.

In the next step, *cmgo_datachannel_connect* must initiate the connection structure, which, if it does not finish within the set time, will fail to contact.

Receiving events takes place by repeatedly invoking the *cmgo_datachannel_read* method. Received event packages are delivered through the CMGO_DATACHANNEL_READ_RESULT structure, from which the event data can be extracted directly. The image for the event is available in JPEG format.

You can take initiative for a new event package for each scan. The scanning operation has a timeout, basically, if no new event is received on the data channel after 10 seconds, the call returns with an error.

The CMGO_DATACHANNEL_READ_RESULT structure can be deleted with the *cmgo_datachannel_free_result* method.

After completing these tasks, you must close the connection with the *cmgo_datachannel_disconnect* method and then use the *cmgo_release_datachannel* method to delete the *handle*.

Example

```
#include "carmengo_api_clib.h"

#include <stdio.h>
#include <mem.h>

int main(int argc, char** argv)
{
    int st;
    char address[] = "127.0.0.1";
    unsigned int port = 23;

    CMGO_DATACHANNEL_HANDLE handle = NULL;
    CMGO_DATACHANNEL_READ_RESULT result;

    memset(&result, 0, sizeof(result));

    printf("Creating DataChannel [%s,%u] ...\n", address, port);
    st = cmgo_create_datachannel(address, port, &handle);
    if (0 != st) {
        printf("Couldn't create DataChannel!\n");
        return -1;
    }
    printf("DataChannel Created\n");

    printf("Connecting...\n");
    st = cmgo_datachannel_connect(handle, 10000);
    if (0 != st) {
        printf("Couldn't connect!\n");
        return -1;
    }
    printf("Connected!\n");

    const int N = 10; // max count of the events to read
    for(int i = 0; i < N; i++) {
        printf("Waiting For Result [%d]!\n", i);
        if(0 == cmgo_datachannel_read(handle, &result, 10000)) {
            printf("Result received\n");
            printf(" - Plate: %s\n", result.plate_text);
            printf(" - JPEG Size: %d\n", result.jpeg_size);
            printf("\n");
            fflush(stdout);
        } else {
            printf("Waiting Timed Out!\n");
            fflush(stdout);
        }
    }

    printf("Free Result Structure\n");
    cmgo_datachannel_free_result(&result);

    printf("Disconnect\n");
    cmgo_datachannel_disconnect(handle);

    printf("Release DataChannel\n");
    cmgo_release_datachannel(handle);

    return 0;
}
```

Contact Information

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If this is your first online support request, please create an account by clicking on this link.

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