



iSmartWays Technology Inc.

Mocar V2X SDK API Specification

2019-03-26

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1. Overview

Mocar V2X SDK is designed by iSmartWays Technology Inc. for V2X application development. The applications developed by the SDK are adapted to run on the Mocar OBE devices and the Mocar RSE devices.

It is straightforward and quick to build V2X applications, including V2V, V2I, V2P, V2N and others, with Mocar SDK.

Mocar V2X SDK has the following features:

- different communications: DSRC, C-V2X
- different data-sets: SAE J2735 – 2016, T/CSAE 53 - 2017
- simple and clear APIs: send and receive data

2. API to initialize

int mde_v2x_init(char * log_cfg_path, const char* moudle_name)

Description:

This API initializes v2x SDK and log system.

Parameters:

log_cfg_path : name and path of log configuration file

module_name: module name to generate log file.

Return Value:

0 - success

others - failure

3. API to send and receive message

3.1 BSM

int mde_v2x_register_bsm (void (*bsm_recv_cb) (v2x_msg_bsm_t* user_bsm))

Description:

This API registers BSM message.

Parameters:

void (*bsm_recv_cb)(v2x_msg_bsm_t* user_bsm):

Callback function to handle bsm data (v2x_msg_bsm_t) at receiving end.

Memory associates with user_bsm will be freed by SDK automatically.

Return Value:

0 - success

others - failure

int mde_v2x_send_bsm(v2x_msg_bsm_t* user_bsm)

Description:

This API sends BSM message.

Parameters:

v2x_msg_bsm_t* user_bsm

BSM data that will be sent.

Return Value:

0 - success

others - failure

3.2 MAP

int mde_v2x_register_map(void (*map_recv_cb) (v2x_msg_map_t* user_map))

Description:

This API registers MAP message.

Parameters:

void (*map_recv_cb) (v2x_msg_map_t* user_map) :

Callback function to handle MAP data (v2x_msg_map_t) at receiving end.

Memory associates with user_map will be freed by SDK automatically.

Return Value:

0 - success

others - failure

int mde_v2x_send_map(v2x_msg_map_t* user_map)

Description:

This API sends MAP message.

Parameters:

v2x_msg_map_t* user_map

MAP data that will be sent.

Return Value:

0 - success

others - failure

3.3 SPAT

int mde_v2x_register_spat(void (*spat_recv_cb) (v2x_msg_spat_t* user_spat))

Description:

This API registers SPAT message.

Parameters:

void (*spat_rcv_cb) (v2x_msg_spat_t* user_spat) :

Callback function to handle SPAT data (v2x_msg_spat_t) at receiving end.

Memory associates with user_spat will be freed by SDK automatically.

Return Value:

0 - success

others - failure

int mde_v2x_send_spat(v2x_msg_spat_t* user_spat)

Description:

This API sends SPAT message.

Parameters:

v2x_msg_spat_t* user_spat :

SPAT data that will be sent.

Return Value:

0 - success

others – failure

3.4 RSA

int mde_v2x_register_rsa(void (*rsa_rcv_cb) (v2x_msg_rsa_t* user_rsa))

Description:

This API registers RSA message.

Parameters:

void (*rsa_rcv_cb) (v2x_msg_rsa_t* user_rsa) :

Callback function to handle RSA data (v2x_msg_rsa_t) at receiving end.

Memory associates with user_rsa will be freed by SDK automatically.

Return Value:

0 - success

others - failure

int mde_v2x_send_rsa(v2x_msg_rsa_t* user_rsa)

Description:

This API sends RSA message.

Parameters:

v2x_msg_rsa_t* user_rsa :

RSA data that will be sent.

Return Value:

- 0 - success
- others - failure

3.5 TIM

int mde_v2x_register_tim(void (*tim_rcv_cb) (v2x_msg_tim_t* user_tim))

Description:

This API registers TIM message.

Parameters:

void (*tim_rcv_cb) (v2x_msg_tim_t* user_tim) :

Callback function to handle TIM data (v2x_msg_tim_t) at receiving end.

Memory associates with user_tim will be freed by SDK automatically.

Return Value:

- 0 - success
- others - failure

int mde_v2x_send_tim(v2x_msg_tim_t* user_tim)

Description:

This API sends TIM message.

Parameters:

v2x_msg_tim_t* user_tim :

TIM data that will be sent.

Return Value:

- 0 - success
- others – failure

3.6 SSM

int mde_v2x_register_ssm(void (*ssm_rcv_cb) (v2x_msg_ssm_t* user_ssm))

Description:

This API registers SSM message.

Parameters:

void (*ssm_rcv_cb) (v2x_msg_ssm_t* user_ssm) :

Callback function to handle SSM data (v2x_msg_ssm_t) at receiving end.

Memory associates with user_ssm will be freed by SDK automatically.

Return Value:

- 0 - success

others - failure

int mde_v2x_send_ssm(v2x_msg_ssm_t* user_ssm)

Description:

This API sends SSM message.

Parameters:

v2x_msg_ssm_t* user_ssm :
SSM data that will be sent.

Return Value:

0 - success
others – failure

3.7 SRM

int mde_v2x_register_srm(void (*srm_recv_cb) (v2x_msg_srm_t* user_srm))

Description:

This API registers SRM message.

Parameters:

void (*srm_recv_cb) (v2x_msg_srm_t* user_srm) :
Callback function to handle SRM data (v2x_msg_srm_t) at receiving end.
Memory associates with user_srm will be freed by SDK automatically.

Return Value:

0 - success
others - failure

int mde_v2x_send_srm(v2x_msg_srm_t* user_srm)

Description:

This API sends SRM message.

Parameters:

v2x_msg_srm_t* user_srm :
SRM data that will be sent.

Return Value:

0 - success
others – failure

3.8 RTCM

int mde_v2x_register_rtcn(void (*rtcmm_recv_cb) (v2x_msg_rtcmm_t* user_rtcmm))

Description:

This API registers RTCM message.

Parameters:

void (*rtcm_rcv_cb) (v2x_msg_rtcn_t* user_rtcn) :

Callback function to handle RTCM data (v2x_msg_rtcn_t) at receiving end.

Memory associates with user_rtcn will be freed by SDK automatically.

Return Value:

0 - success

others - failure

int mde_v2x_send_rtcn(v2x_msg_rtcn_t* user_rtcn)

Description:

This API sends RTCM message.

Parameters:

v2x_msg_rtcn_t* user_srm :

RTCM data that will be sent.

Return Value:

0 - success

others - failure