PayloadSDK Functions

Version history

Version	Publish date	Description
v1.0.0	05/23/2025	Add format SD card function

Connection functions

sdkInitConnection

- Brief: Initialize the connection to the payload via UDP or UART.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: True if connection successful, False otherwise (bool)

checkPayloadConnection

- Brief: Check the connection to the payload within a specified timeout period.

Param	Type	Range	Default Value	Description
timeout	float	> 0	5.0	Timeout in seconds

- Return: True if connection successful, False otherwise (bool)

sdkQuit

- Brief: Close the connection and stop the data receiving thread.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

Camera Control functions

setPayloadCameraParam

- Brief: Set the parameter value for the payload's camera.

Param	Type	Range	Default Value	Description
param_id	str	None	None	Parameter ID
param_value	int	None	None	Parameter value
param_type	int	(1) MAV_PARAM_TYPE_UINT8 (2) MAV_PARAM_TYPE_INT8 (3) MAV_PARAM_TYPE_UINT16 (4) MAV_PARAM_TYPE_INT16 (5) MAV_PARAM_TYPE_UINT32 (6) MAV_PARAM_TYPE_INT32 (7) MAV_PARAM_TYPE_UINT64 (8) MAV_PARAM_TYPE_INT64 (9) MAV_PARAM_TYPE_REAL32 (10)MAV_PARAM_TYPE_REAL64	None	Data type of the parameter

- Return: None

setPayloadCameraMode

- Brief: Set the operating mode for the camera

Param	Type	Range	Default Value	Description
mode	int	(0) CAMERA_MODE_IMAGE (1) CAMERA_MODE_VIDEO	None	Camera mode

- Return: None

setPayloadCameraCaptureImage

- Brief: Request the camera to capture an image.

Param	Type	Range	Default Value	Description
interval_s	int	>= 0	0	Interval between captures in seconds

- Return: None

setPayloadCameraStopImage

- Brief: Stop the interval image capturing process.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

setPayloadCameraRecordVideoStart

- Brief: Start video recording.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

setPayloadCameraRecordVideoStop

- Brief: Stop video recording.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

setCameraZoom

- Brief: Adjust the camera's zoom level.

Param	Type	Range	Default Value	Description
zoom_type	float	(0) ZOOM_TYPE_STEP (1) ZOOM_TYPE_CONTINUOUS (2) ZOOM_TYPE_RANGE	None	Type of zoom
zoom_value	float	zoom_type equal ZOOM_TYPE_STEP and equal ZOOM_TYPE_CONTINUOUS (-1) ZOOM_OUT (0) ZOOM_STOP (1) ZOOM_IN	None	Zoom value
zoom_value	float	zoom_type equal ZOOM_TYPE_RANGE from 0.0% to 100.00%	None	Zoom value

- Return: None

setCameraFocus

- Brief: Adjust the camera's focus.

Param	Type	Range	Default Value	Description
focus_type	float	(1) ZOOM_TYPE_CONTINUOUS (4) FOCUS_TYPE_AUTO	None	Type of focus
focus_value	float	zoom_type equal ZOOM_TYPE_CONTINUOUS (-1) FOCUS_OUT (0) FOCUS_STOP (1) FOCUS_IN (2) FOCUS_AUTO	0	Focus value

- Return: None

getPayloadCameraSettingList

- Brief: Request the list of all camera parameters.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadCameraSettingByID

- Brief: Request the value of a specific camera parameter by ID.

Param	Type	Range	Default Value	Description
param_id	str	None	None	Parameter ID

- Return: None

getPayloadCameraSettingByIndex

- Brief: Request the value of a camera parameter by index.

Param	Type	Range	Default Value	Description
idx	int	None	None	Parameter index

- Return: None

getPayloadCameraMode

- Brief: Request the current mode of the camera.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadCameraInformation

- Brief: Request detailed information about the camera.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadCameraStreamingInformation

- Brief: Request information about the camera's video stream.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadStorage

- Brief: Request information about the camera's storage (SD card).

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadCaptureStatus

- Brief: Request the current capture status of the camera.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

setParamRate

- Brief: Set the message rate for a specific parameter.

Param	Type	Range	Default Value	Description
param_index	int	None	Valid indices from PAYLOAD_PARAMS	Index of the parameter
time_ms	int	None	≥ 0	Time interval between messages in milliseconds

- Return: None

Gimbal Control functions

setPayloadGimbalParamByID

- Brief: Set the value of a gimbal parameter by ID.

Param	Type	Range	Default Value	Description
param_id	str	None	None	Parameter ID
param_value	float	None	None	Parameter value

- Return: None

setGimbalSpeed

- Brief: Set the speed or angle for move gimbal

Param	Type	Range	Default Value	Description
spd_pitch	float	-90 to 90	None	Pitch speed/angle in degrees
spd_roll	float	-180 to 180	None	Roll speed/angle in degrees
spd_yaw	float	-180 to 180	None	Yaw speed/angle in degrees
mode	input_mode_t	(1)INPUT_ANGLE (2)INPUT_SPEED	None	Input mode

- Return: None

getPayloadGimbalSettingList

- Brief: Request the list of all gimbal parameters

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

getPayloadGimbalSettingByID

- Brief: Request the value of a specific gimbal parameter by ID.

Param	Type	Range	Default Value	Description
param_id	str	None	None	Parameter ID

- Return: None

getPayloadGimbalSettingByIndex

- Brief: Request the value of a gimbal parameter by index.

Param	Type	Range	Default Value	Description
idx	int	None	None	Parameter index

- Return: None

sendPayloadGimbalCalibGyro

- Brief: Send command to calibrate the gimbal's gyro.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

sendPayloadGimbalCalibAccel

- Brief: Send command to calibrate the gimbal's accelerometer.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

sendPayloadGimbalCalibMotor

- Brief: Send command to calibrate the gimbal's motor.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

sendPayloadGimbalSearchHome

- Brief: Send command to search for the gimbal's home position.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

sendPayloadGimbalAutoTune

- Brief: Send command to auto-tune the gimbal.

Param	Type	Range	Default Value	Description
status	bool	True/False	None	True to enable, False to disable

- Return: None

FFC Control Functions

setPayloadCameraFFCMode

- Brief: Set the FFC mode for the camera.

Param	Type	Range	Default Value	Description
mode	int	0-1	None	FFC mode (0: Manual, 1: Auto)

- Return: None

setPayloadCameraFFCTrigg

- Brief: Trigger FFC calibration for the camera.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

GPS functions

sendPayloadGPSRawInt

- Brief: Send the GPS RAW information to the payload.

Param	Type	Range	Default Value	Description
gps_raw	mavlink_gps_raw_int_t	None	None	GPS raw data structure

- Return: None

sendPayloadGPSPosition

- Brief: Send GPS position information to the payload.

Param	Type	Range	Default Value	Description
gps_data	mavlink_global_position_int_t	None	None	GPS position data structure

- Return: None

System Time function

sendPayloadSystemTime

- Brief: Send system time information to the payload.

Param	Type	Range	Default Value	Description
sys_time_data	mavlink_system_time_t	None	None	System time data structure

- Return: None

SD Card function

setFormatSDCard

- Brief: Format the camera's SD card.

Param	Type	Range	Default Value	Description
None	None	None	None	None

- Return: None

Object Tracking function

setPayloadObjectTrackingParams

- Brief: Set parameters for object tracking functionality.

Param	Type	Range	Default Value	Description
cmd	float	(0)TRACK_IDLE (1)TRACK_ACT (2)TRACK_LOST	None	Tracking command
pos_x	float	None	960	X position
pos_y	float	None	540	Y position

- Return: None

Callback functions

regPayloadStatusChanged

- Brief: Register a callback to receive notifications when the payload status changes.

Param	Type	Range	Default Value	Description
callback	Callable	None	None	Function that takes payload_status_event_t and List[float] as parameters

- Return: None

regPayloadParamChanged

- Brief: Register a callback to receive notifications when a payload parameter changes.

Param	Type	Range	Default Value	Description
callback	Callable	None	None	Function that takes payload_status_event_t, str, and List[float] as parameters

- Return: None

regPayloadStreamChanged

- Brief: Register a callback to receive notifications when the payload's video stream information changes.

Param	Type	Range	Default Value	Description
callback	Callable	None	None	Function that takes payload_status_event_t, str, and List[float] as parameters

- Return: None