LIBARTESKY SDK

PROGRAMMING REFERENCE

version 0.5.0

INTRODUCTION

LIBARTESKY provides a C++ language interface for accessing the USB ARTESKY Flat Box. This document describes the collection of functions implemented in the LIBARTESKY library. It can be used on system configurations reported in table below.

LIBARTESKY VERSION	ARTESKY USB FLAT BOX FIRMWARE	OPERATIVE SYSTEMS	ARCHITECTURE	PLATFORM TOOLSET	WINDOWS SDK
0.5.0 (beta)	0.1	Microsoft Windows 10	32 bit / 64 bit	VS 2017 (v.141)	10.0.17763.0

The following header files are required in order to use the LIBARTESKY library:

serial.h	serial port communication (artesky::SerialCom class)
serial_finder.h	search active OS serial ports (SerialFinder class). Based on combaseapi.h, this class works only with non-GUI threads
libartesky_defs.h	libartesky definitions
libartesky_errors.h	ArteSky Library (ASL) error codes list
libartesky.h	libartesky library header file (artesky::Flat class)
libartesky_info.h	product info definitions

Library files are also required for linking:

libartesky_x64.lib, libartesky_x64.dll	Microsoft Windows 64-bit (release version)
libartesky.lib, libartesky.dll	Microsoft Windows 32-bit (release version)

LIBARTESKY FUNCTIONS

The list of public functions declared in libartesky.h header file follows.

```
ASL_ERROR artesky::Flat::connect(const char *portName, const bool& async = true)
```

Description: open the communication with the ARTESKY USB Flat Box using a serial port protocol. During initialization, the ARTESKY USB Flat Box bootloader spends about two seconds. In order to avoid blocking situation the connect function is executed by default in a separate thread (asynchronous execution).

Input parameters:

- portName: serial port name in format COM#
- async: true for asynchronous execution, false otherwise

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully

```
ASL_ERROR artesky::Flat::connect()
```

Description: open the communication with the ARTESKY USB Flat Box using a serial port protocol. ⚠ THIS FUNCTION IS CONSIDERED EXPERIMENTAL (NOT TESTED). SUPPORT WILL NOT BE GUARANTEE IN THE NEXT LIBRARY VERSIONS.

Input parameters:

- none

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_CONNECTION_ERROR: function executed with error. No serial port has been found.

`ASL_ERROR artesky::Flat::disconnect()`

Description: close the communication with the ARTESKY USB Flat Box.

Input parameters:

- none

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully

`ASL_ERROR artesky::Flat::getSerialPortList(std::vector<std::string>& portList)`

Description: retrieve the available serial ports. ⚠ THIS FUNCTION IS CONSIDERED EXPERIMENTAL. IT CAN BE USED ONLY IN NOT-GUI APPLICATIONS. SUPPORT WILL NOT BE GUARANTEE IN THE NEXT LIBRARY VERSIONS.

Input parameters:

- none

Output parameters:

- portList: the list of available serial ports in COM# format

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_COM_FINDER_ERROR: function executed with error. No serial port available on OS.

`ASL_ERROR artesky::Flat::getSerialPort(std::string& serialPort)`

Description: retrieve the serial port to witch the ARTESKY USB Flat Box is connected.

Input parameters:

- none

Output parameters:

- serialPort: the serial port name in COM# format.

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_CONNECTION_ERROR: function executed with error. ARTESKY USB Flat box is disconnected

`ASL_ERROR artesky::Flat::isFlatConnected(bool& isConnected)`

Description: check if the ARTESKY USB Flat Box is connected.

Input parameters:

- none

Output parameters:

- isConnected: if true, the ARTESKY USB Flat Box is connected

Return value:

- ASL_NO_ERROR: function executed successfully

`ASL_ERROR artesky::Flat::turnOn()`

Description: switch on the ARTESKY USB Flat Box lamp.

Input parameters:

- none

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_TURN_ON_ERROR: function executed with error. Communication or firmware error.

`ASL_ERROR artesky::Flat::turnOff()`

Description: switch off the ARTESKY USB Flat Box lamp.

Input parameters:

- none

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_TURN_OFF_ERROR: function executed with error. Communication or firmware error.

```
ASL_ERROR artesky::Flat::setBrightness(const uint32_t& level)
```

Description: set the ARTESKY USB Flat Box lamp brightness level. The range is between 0 and 255.

Input parameters:

- level: brightness level in the [0,255] value range

Output parameters:

- none

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_SET_BRIGHTNESS_ERROR: function executed with error. Communication or firmware error.

```
ASL_ERROR artesky::Flat::getBrightness(uint32_t& level)
```

Description: retrieve the ARTESKY USB Flat Box lamp brightness level. The range is between 0 and 255.

Input parameters:

- none

Output parameters:

- level: brightness level in the [0,255] value range

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_GET_BRIGHTNESS_ERROR: function executed with error. Communication or firmware error.

```
ASL_ERROR artesky::Flat::getStatus(bool& status)
```

Description: retrieve the ARTESKY USB Flat Box lamp status i.e. if the lamp is switched on or off.

Input parameters:

- none

Output parameters:

- status: if true, the ARTESKY USB Flat Box lamp is switched on

Return value:

- ASL_NO_ERROR: function executed successfully
- ASL_GET_STATUS_ERROR: function executed with error. Communication or firmware error.

```
ASL_ERROR artesky::Flat::getAPIversion(std::string& version)
```

Description: retrieve the LIBARTESKY library version.

Input parameters:

- none

Output parameters:

- version: libartesky version in major.minor.patch.build format.

Return value:

- ASL_NO_ERROR: function executed successfully

SUMMARY