

AirMapSDK-Embedded

version 1.0A

AirMap

September 28, 2016

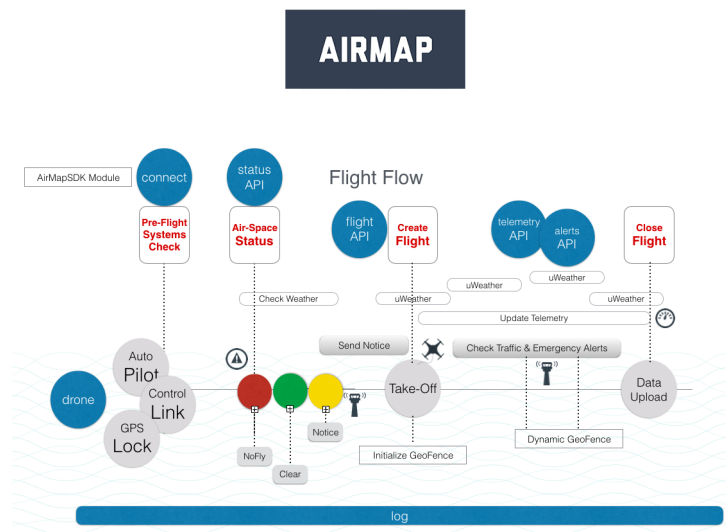
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Welcome to AirMap's documentation!

Airmap -- Airspace Management For Drones.

AirMapSDK is a Python library for interfacing with the [Airmap](#) API.



Pre-Requisites:

- Airmap developer account
- X-API-Key from your account
- GPS data (fake gps included)
- OAuth token
- pip
- getAirmap.py (copy to /home/root/installs directory or similar)
- AirMapSDK-Embedded is pre-installed

Wi-Fi Connectivity

```
ifconfig (check for wlan0 or LTE ethX)
cd /etc
sudo wpa_passphrase yourSSID yourPassphrase > wpa-Aero.conf
sudo wpa_supplicant -i wlan0 -c /etc/wpa-Aero.conf &
sudo dhclient wlan0
```

Update AirMapSDK-Embedded

```
cd /etc/airmap
python getAirmap.py airmap AirMapSDK-Embedded
unzip AirMapSDK-Embedded-master.zip
cd AirMapSDK-Embedded-master
```

User Example

```
cd /etc/airmap/AirMapSDK-Embedded
python userapp.py
```

API Example

```
(connect) airmap.connect.set_XAPIKey(xapikey) - Set your X-API-Key from your Airmap account
(connect) airmap.connect.get_boardID() - Retrieve CID information
(connect) airmap.connect.connect() - Check internet connection and endpoint status Returns: True if ready
(statusAPI) airmap.statusAPI.get_status(lat,lon,Weather.on) - Given position retrieve airspace data
(statusAPI) Parse status information including weather, advisories, and maximum flight bounds (see statusAPI documentation)
(user) Process required notifications if needed
(connect) airmap.connect.get_SecureToken() - get security token
```

(flightAPI) airmap.flightAPI.create_FlightPoint (flight time,lat,lon,publicflight?,sendnotifications?) - Setup the flight and flight time Returns flightID
(flightAPI) airmap.flightAPI.get_PilotID() - Returns pilotID for this account
(flightAPI) airmap.flightAPI.end_Flight(flightID) - End the flight specified by flight ID
(flightAPI) airmap.flightAPI.delete_Flight(flightID) - Delete flight described by flightID
(flightAPI) airmap.flightAPI.get_FlightList(pilotID) - Get all flights for pilotID
(flightAPI) airmap.flightAPI.cmd_KillFlights(pilotID) - Delete all flights under specified pilotID

Documentation can be found at <https://developer.airmap.io>

Source code can be found at <https://github.com/...>

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Contents:

airmap Package

airdefs Module

airdefs AirMapSDK

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class airmap.airdefs.**Advisories** (*distance, last_updated, name, city, color, country, longitude, properties, state, latitude, type, id*)

Advisory group list

Notes: Distance, date of last update, name, city, color(status), country, longitude, properties, state, latitude, type, id

class airmap.airdefs.**Advisory**

Advisory information (Pre-Flight, In-Flight)

Notes: Advisory status color list

class **Color**

Flight status color code

Colors

Color code

Parameters:

- **gray** -- Disabled
- **green** -- Go
- **yellow** -- Advise
- **red** -- NoFly

alias of **Enum**

enum (**sequential, **named*)

class airmap.airdefs.**Globals**

Global settings

Notes: Session parameters address, port, timeout, api key, token, pilot id, flight id

AirConnected = *False*

dbgPrint (*data*)

Debug send to console

Parameters: **data** -- Debug or information to send to console

Returns: None

`httpPort = 80`

`httpsAddr = 'api.airmap.io'`

`httpsPort = 443`

`keyAddr = 'sso.airmap.io'`

`myFlightID = None`

`myToken = None`

`pilotIDValid = False`

`pilot_id = None`

strPrint (data)

Information send to console

Parameters: `data` -- information to send to console

Returns: None

`telemetryAddr = 'api-aero-telemetry.airmap.com'`

`thisCID = None`

`timeOut = 18`

`xapikey = None`

class airmap.airdefs.Notify

Enable notifications

Parameters:

- **on** -- Enable notifications
- **off** -- Disable notifications

`off = False`

`on = True`

class airmap.airdefs.Properties (prop_name, prop_value)

Name to Value Keypairs

class airmap.airdefs.Public

Make flight public

Parameters:

- **on** -- Public flight
- **off** -- Private flight

`off = False`

`on = True`

class airmap.airdefs.Requirement

Notification requirments contact key pair list

State

alias of **Enum**

enum (*sequential, **named)

class airmap.airdefs.Startup
Startup configuration

Notes:

class Drone
Drone information (ID, Location, Status)

State
alias of **Enum**

enum (*sequential, **named)

class airmap.airdefs.Weather
Weather control parameters

Parameters:

- **on** -- Enable weather data
- **off** -- Disable weather data

off = 'false'

on = 'true'

connect Module

connect AirMapSDK

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class airmap.connect.Connect

connect ()
Connect to service

Param: None

Returns: True - if connected otherwise False

connection = None
Connection instance

Notes: HTTPS access variable

get_SecureToken ()
Retrieve security token and refresh

Param: None

Returns: Token if successful otherwise False

Todo: Remove hardcoded token and add token from https endpoint based on CID

get_boardID ()
Retrieve CID from mmcbk0

Param: None

Returns: CID otherwise False

headers = None

Connection headers security and format

Notes: Security and format headers

`os = <module 'os' from '/usr/lib/python2.7/os.pyc'>`
OS access

Notes: Run sys commands

`set_Timeout (time_out)`
Set https request timeout time

Parameters: `time_out` -- Timeout time in seconds

Returns: True - Success, False - Fail

`set_XAPIKey (xapikey)`
Set https request timeout time

Parameters: `xapikey` -- X-API-Key from developers account

Returns: True - Success, False - Fail

`thisGlobals = <airmap.airdefs.Globals instance at 0x2b5bef5ce2d8>`
Global parameter access

Notes: Endpoint address, ports, token, id(s)

statusAPI Module

statusAPI AirMapSDK

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```
class airmap.statusAPI.Status
```

```
    cmd_ProcessAdvisories ()
```

```
    connection = None
```

```
    get_Advisories ()
```

```
    get_Advisory (id)
```

```
    get_Condition ()
```

```
    get_Humidity ()
```

```
    get_MaxDistance ()
```

```
    get_Precipitation ()
```

```
    get_StatusCode ()
```

```
    get_StatusColor ()
```

```
    get_Temperature ()
```

```
    get_Visibility ()
```

```
    get_WindGusting ()
```

```
    get_WindHeading ()
```

```
get_WindSpeed ()  
  
get_status (gps_lat, gps_lon, weather)  
  
headers = None  
  
levelDown (data)  
  
localAdvisories = []  
  
localLevelDown = []  
  
localProperties = []  
  
os = <module 'os' from '/usr/lib/python2.7/os.pyc'>  
  
status_json = None  
  
thisGlobals = <airmap.airdefs.Globals instance at 0x2b5bef5ce440>
```

flightAPI Module

flightAPI AirMapSDK

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```
class airmap.flightAPI.Flight
```

```
    cmd_KillFlights (pilotID)  
  
    connection = None  
  
    create_FlightPoint (time, lat, lon, public, notify)  
  
    delete_Flight (flightID)  
  
    end_Flight (flightID)  
  
    get_FlightList (pilotID)  
  
    get_PilotID ()  
  
    headers = None  
  
    os = <module 'os' from '/usr/lib/python2.7/os.pyc'>  
  
    thisGlobals = <airmap.airdefs.Globals instance at 0x2b5bef5ce5f0>
```

drone Module

drone AirMapSDK

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```
class airmap.drone.drone
```

log Module

log AirMapSDK

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```
class airmap.log.log
```

telemetryAPI Module

telemetryAPI AirMapSDK

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```
class airmap.telemetryAPI.Telemetry
```

```
    connection = None
```

```
    headers = None
```

```
    os = <module 'os' from '/usr/lib/python2.7/os.pyc'>
```

```
    post_Telemetry (flightID, lat, lon, alt, ground_speed, heading, barometer, status, battery,
                    drone, seq, logused)
```

```
    put_Telemetry (flightID, lat, lon, alt, ground_speed, heading, barometer, status, battery,
                   drone, seq, logused)
```

```
    thisGlobals = <airmap.airdefs.Globals instance at 0x2b5bef5ce710>
```

alertsAPI Module

alertsAPI AirMapSDK

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```
class airmap.alertsAPI.alertsAPI
```

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