# ISWiFi Communication

# Table of Contents

# Changelog

| Rev | Date | Description | Author |
|---|---|---|---|
| 1.0 | 18.2.17 | Init draft | M.R. |
| | | | |

# Description

This document describes details of communication of ISWiFi module.

# Implementation

Communication with ISWiFi should be based on RESTful API.

## Authentication

Authentication is based on WiFi module's authentication functionality, and the assertion, that only one connection can be made at a time.

## Methods

Following subset of HTTP methods defined in RFC2616 is to be implemented:

| | |
|---|---|
| GET | Used to retrieve data. Use Accept:application/msgpack |
| POST | Used to push data |
| DELETE | Ued to clear logs |

## Payload Protocol

Payload of the messages uses MessagePack serialization method http://msgpack.org/index.html

## Responses

Following subset of HTTP status codes defined in RFC2616 is to be implemented:

| | |
|---|---|
| 200 | OK |
| 400 | Bad request - The request could not be understood by the server due to malformed syntax. The client SHOULD NOT repeat the request without modifications. |
| 404 | Not found - The server has not found anything matching the Request-URI |
| 405 | Method not allowed - The method specified in the Request-Line is not allowed for the resource identified by the Request-URI. The response MUST include an Allow header containing a list of valid methods for the requested resource. |
| 408 | Request timeout - The client did not produce a request within the time that the server was prepared to wait. The client MAY repeat the request without modifications at any later time. Used also when communication with ISM010 timeouts |

# Parameters

## Parameter

Allows access to parameter of ID xxx. Expect 404, 423 replies

| | |
|---|---|
| ID | None |
| URI | /Parameter{xxx} |
| Type | unknown |
| Methods | POST, GET, DELETE |

# Time

## Time

### Time

Current time in unix time format **Unix time** (also known as **POSIX time** or **epoch time**) is a system for describing instants in time, defined as the number of seconds that have elapsed since 00:00:00 Coordinated Universal Time (UTC), Thursday, 1 January 1970,[1][note 1] not counting leap seconds.[1][2][note 2]

| | |
|---|---|
| ID | 1000 |
| URI | /Time/Time |
| Type | int |
| Methods | POST, GET |

### SystemStartTime

Time of last power on in unix time(see details of /Time/Time)

| | |
|---|---|
| ID | 1001 |
| URI | /Time/SystemStartTime |
| Type | int |
| Methods | GET |

### SystemUptime

System uptime in seconds (from last power on)

| | |
|---|---|
| ID | 1002 |
| URI | /Time/SystemUptime |
| Type | int |
| Methods | GET |

# Runtime

## LastIgnition

time of last successful ignition in unix time (see /time/Time)

| | |
|---|---|
| ID | 1100 |
| URI | /Runtime/LastIgnition |
| Type | int |
| Methods | GET |

### StateUptime

number of seconds since last change of phase

| | |
|---|---|
| ID | 1101 |
| URI | /Runtime/StateUptime |
| Type | int |
| Methods | GET |

### Phase

Name of current state

| | |
|---|---|
| ID | 1102 |
| URI | /Runtime/Phase |
| Type | string |
| Methods | GET |

### State

Current state: IDLE, BUSY

| | |
|---|---|
| ID | 1103 |
| URI | /Runtime/State |
| Type | string |
| Methods | GET |

## Errors

### LastErrorTime

time when the last error appeared in unix time

| | |
|---|---|
| ID | 1200 |
| URI | /Errors/LastErrorTime |
| Type | int |
| Methods | GET |

### LastError

Last error

| | |
|---|---|
| ID | 1201 |
| URI | /Errors/LastError |
| Type | str |
| Methods | GET |

### ErrorList

Content of error log file. Delete clears out error list array of [time, error code, error name]

| | |
|---|---|
| ID | 1202 |
| URI | /Errors/ErrorList |
| Type | [[int, int,str]] |
| Methods | GET, DELETE |

## Properties

### Firmware

Firmware version

| | |
|---|---|
| ID | 1300 |
| URI | /Properties/Firmware |
| Type | str |
| Methods | GET |

### Hardware

Hardware version

| | |
|---|---|
| ID | 1301 |
| URI | /Properties/Hardware |
| Type | str |
| Methods | GET |

### LastChange

time of last pchange of parameters in unix time, parameter name , old and new value [time,name, ID, old val, new val]

| | |
|---|---|
| ID | 1302 |
| URI | /Properties/LastChange |
| Type | [int, int, str, str, str] |
| Methods | GET |

### Log

Content oflog file, delete clears log, array of [time, log entry]

| | |
|---|---|
| ID | 1303 |
| URI | /Properties/Log |
| Type | [[int, str]] |
| Methods | GET, DELETE |

### PermLog

Content of permanent log file, delete clears log, array of [time, log entry]

| | |
|---|---|
| ID | 1304 |
| URI | /Properties/PermLog |
| Type | [[int, str]] |
| Methods | GET |

### Settings

dump of all current settings, array of [ID, name, value] (does not return ISM0-10 registers)

| | |
|---|---|
| ID | 1305 |
| URI | /Properties/Settings |
| Type | [[int, str, str]] |
| Methods | GET |

### UART

Uart parameters in format 9600 8 N 1[int, int, str, int]

| | |
|---|---|
| ID | 1306 |
| URI | /Properties/UART |
| Type | [int, int, str, int] |
| Methods | GET |

## TempController

### Temperature

current temperature seen by controller

| | |
|---|---|
| ID | 1400 |
| URI | /TempController/Temperature |
| Type | dbl |
| Methods | GET |

### Output

Output of temperature controller

| | |
|---|---|
| ID | 1401 |
| URI | /TempController/Output |
| Type | bool |
| Methods | GET |

### Setpoint

current setpoint

| | |
|---|---|
| ID | 1402 |
| URI | /TempController/Setpoint |
| Type | dbl |
| Methods | GET, POST |

### Hysteresis

Hysteresis of controller.

| | |
|---|---|
| ID | 1403 |
| URI | /TempController/Hysteresis |
| Type | dbl |
| Methods | GET, POST |

## ISM010

### RegisterAccess

Provides access to Register of address xxx in ISM010. Should manage trailing zeros, expect 423 return code in :http://www.restpatterns.org/HTTP_Status_Codes/423_-_Locked, 404, 405

| | |
|---|---|
| ID | xxx |
| URI | /ISM010/{xxx} |
| Type | int |
| Methods | GET, POST |

### ReadAll

get newest settings from ISM0-10, forces read from HW, may timeout (408) [register address, value]

| | |
|---|---|
| ID | 999 |
| URI | /ISM010/ReadAll |
| Type | [[int, int]] |
| Methods | GET |

### Restart

Allows a method to restart ISM010. Write a code 0x26 to activate, reply 405 otherwise. Upon restart /Runtime/State should be set to BUSY

| | |
|---|---|
| ID | 998 |
| URI | /ISM010/Restart |
| Type | int |
| Methods | POST |

## Data

Allows to read content of the file {filename}. The filename should be limited to 8 chars+3 char extension and allow only DOS recognizable filenames.

| | |
|---|---|
| ID | 1500 |
| URI | /Data/{filename} |
| Type | str |
| Methods | GET, DELETE |