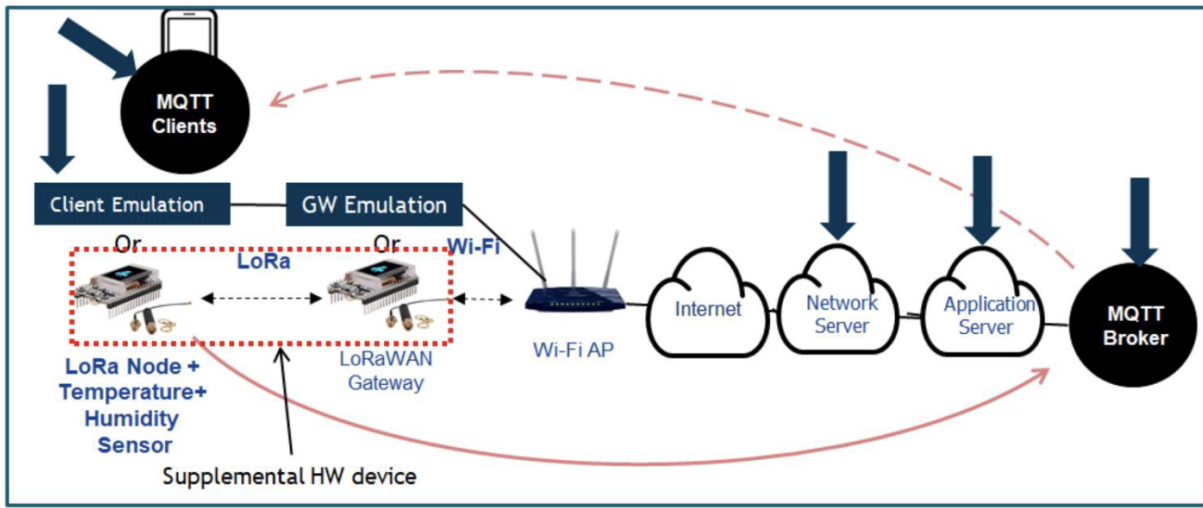# CIS549 project 5

Xiao Zhong

1.

Client Emulation:

- Packet Forward Host address (lora host address): nam1.cloud.thethings.network
- Gateway EUI: 08:00:27:00:00:58:f3:b5
- Device address:260CCC56
- NwkSkey:0x60, 0x18, 0x9F, 0x7B, 0xA3, 0x7F, 0x07, 0x25, 0x76, 0x70, 0x72, 0x2A, 0xBF, 0x86, 0xF4, 0x65
- AppsKey:0x69, 0x75, 0xFD, 0x92, 0x06, 0xD1, 0xEF, 0x5C, 0x75, 0x36, 0x6E, 0x28, 0xB9, 0xDE, 0x2E, 0xE6

Network Server:

- Packet Forward Host address: nam1.cloud.thethings.network
- Gateway EUI: 08:00:27:00:00:58:f3:b5
- Device address:260CCC56
- NwkSkey:0x60, 0x18, 0x9F, 0x7B, 0xA3, 0x7F, 0x07, 0x25, 0x76, 0x70, 0x72, 0x2A, 0xBF, 0x86, 0xF4, 0x65

Application Server:

- AppsKey:0x69, 0x75, 0xFD, 0x92, 0x06, 0xD1, 0xEF, 0x5C, 0x75, 0x36, 0x6E, 0x28, 0xB9, 0xDE, 0x2E, 0xE6
- WriteAPIKey: 9SMS2SOOXEPY070L (webhooks)

MQTT Broker(thingSpeak):

- WriteAPIKey: 9SMS2SOOXEPY070L
- ClientID&Username(MQTT API Key):LycLPBoNMDopABgmOiQfMws
- Password: nthTSXr08YutseRPqND5zEqd

- channel ID:1589626

MQTT Clients:

- channel ID:1589626
- ClientID&Username(MQTT API Key):LycLPBoNMDopABgmOiQfMws
- Password: nthTSXr08YutseRPqND5zEqd
- Subscriber topic: **channels/1589626/subscribe/fields/+**

2.

Code is demonstrated below:

```javascript
function decodeUplink(input) {

 var bytes  = input.bytes;

 var port = input.fport;

 var decoded = {};

 var StudentID = (bytes[0]<<24)+ (bytes[1]<<16) +(bytes[2]<<8)+(bytes[3]);

 var Count = (bytes[4]<<8)+(bytes[5]);

 var Temperture = (bytes[6]<<8)+(bytes[7]);

 Temperture = Temperture/100;

 var Humidity = (bytes[8]<<8)+(bytes[9]);

 Humidity = Humidity/100;

 decoded.field1=StudentID;

 decoded.field2 = Count;

 decoded.field3 = Temperture;

 decoded.field4 = Humidity;

  return {

   data: decoded,

   warnings: [],

   errors: []
```

```
};

}
```


Figure.1. TTN console Page

3.

Figure.2.MQTT Client with Data

- Channel ID: **1589626**
- MQTT API Key**: LycLPBoNMDopABgmOiQfMws**
- Read API key: **FOOEBOH57KDEQGW3**
- Topic String: **channels/1589626/subscribe/fields/+**