**Amirhosein Ataei**

**amirhosein.ataei@mail.polimi.it**

**10722472**

Analyzing of the Wireshark data and replicate real MQTT massages and send them to a thinkspeak channel.

**1.Inject:** This input used as a stimulation after 0.1 sec to start our program.

**2.Traffic.csv:** The original data is read by this block from storage as a file and the output is defined as a massage per line.

**3.Convert data to js values:** csv file is converted to Java Script variable and output sends as a massage per raw.

**4.Split data on spaces:** Actually, we want to split our data based on spaces which are exist among data.

**5.Select publish massage:** We define a function to filter publish massages by the following code:

var n = msg.payload.search("Publish"); “we search for Publish”

if (n > 0) “If exist, return it”

return msg;

**6.Topic selection:** We select and separate desired topics in our data by using a switch and defining 4 desired topics.

**7.Split HEX codes in same row:** We use this split block to separate our data using “,” which are in the same row.

**8.Select HEX payload:** The goal is to select HEX payloads and after considering all of the HEX payload, we realized that all of them started with "7b22". So we used it as a filter.

if (msg.payload.search("7b22") > 0){

var strLen = msg.payload.length;

msg.payload = msg.payload.substring(msg.payload.search("7b22"), strLen);

return msg;}

**9.hex2string:** Now, that is the time to convert our desired data to string to becomes readable. So, we use define this function:

msg.payload = Buffer.from(msg.payload, 'hex').toString();

return msg;

**10.Make js class on payload:** We convert the string to a Java Script variable.

**11.Select numerical part of the value:** Our goal is have a final data without string ’value’ in payload.col2 . Therefore, we remove that by change block (searching for ‘value:’ and replacing with blank).

**12.http and exec formation of plc:** Basically, form of our massage for delivering is made in this function:

var api\_key = "ZGP69UMELXX9HWKQ";

var mqtt\_key = "CETVDOE3ZF9YPMPF";

var channel\_ID = "1066981";

var data = msg.payload.col2 ;

msg.url = "https://api.thingspeak.com/update?api\_key=" + api\_key + "&field1=" + data;

msg.payload="'channels/"+channel\_ID+"/publish/"+mqtt\_key+"'-m 'field1="+data+"&status=MQTTPUBLISH' -d ";

return msg;

**13.Limit one msg/60s:** We limit our delivering massage by 60s delay block. We don’t have any limitation for this time. Because Min time for sending data to thinkspeak is 20s.

**14.Execute mosquitto to publish mqtt:** Now, that is the time for sending data as mqtt.

http request to thinkspeak: that is a ‘http’ request for sending data via http.

1