GENERATING NORMAL & MALICIOUS TRAFFIC ON LORAWAN 1.0
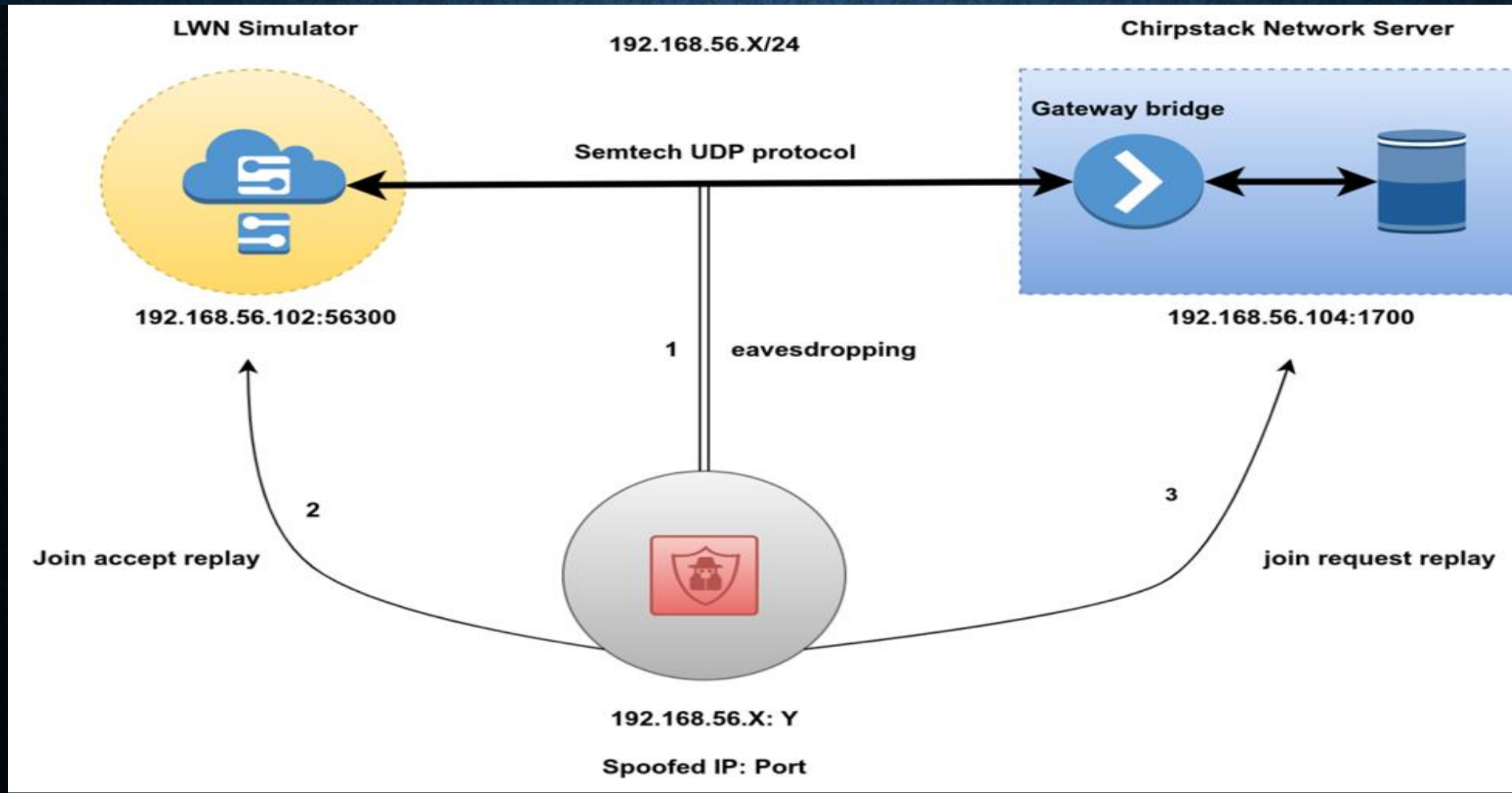
Master Thesis Progress Presentation

30/05/2023
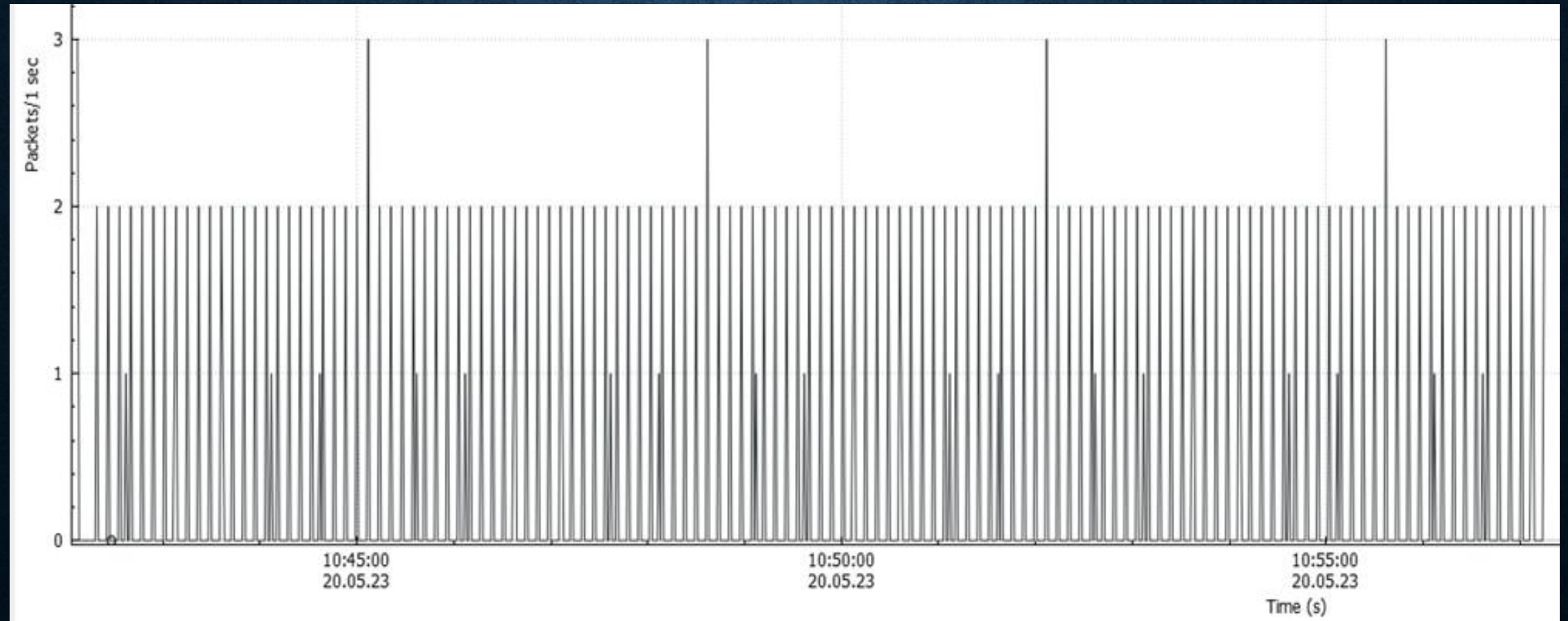
Ekeuh Axel

ATTACKS IMPLEMENTED :

* JOIN ACCEPT REPLAY

* JOIN REQUEST REPLAY

* JOIN REQUEST FLOODING

* KEEP ALIVE FLOODING

NORMAL TRAFFIC LOAD

JOIN REQUEST REPLAY

```
.
Sent 1 packets.
Join Request Replay DOS Statistics
Packets sent: 200
Start time: Sat May 20 15:09:19 2023
End time: Sat May 20 15:11:08 2023
Total execution time: 108.72718524932861 seconds
seam@seam-malnode:~/Desktop$
```

```
429        [ May 20 15:10:05 ] DEV[lora node] |Activation| {A}: None downlink received
430
431        [ May 20 15:10:05 ] DEV[lora node] |Activation| {A}: Unjoined
432
433        [ May 20 15:10:05 ] DEV[lora node] |Activation| {A}: JOIN REQUEST sent
434
435        [ May 20 15:10:05 ] DEV[lora node] |Activation| {A}: Open RXs
```

2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 15:09:53	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	
2023-05-20 15:09:21	JoinAccept	DevEUI: 83717b8a131c5173	Gateway ID: b4562d94afcda48d
2023-05-20 10:42:06	JoinRequest	DevEUI: 83717b8a131c5173	

JOIN REQUEST FLOODING

JOIN ACCEPT REPLAY

```
Sent 1 packets.
Join Accept Replay DOS Statistics
Packets sent: 200
Start time: Sat May 20 14:40:18 2023
End time: Sat May 20 14:42:07 2023
Total execution time: 109.12681674957275 seconds
Transmission rate: 1.8 packets per second
seam@seam-malnode:~/Desktop$
```

```
457     [ May 20 14:41:06 ] GW[seam-gw]: TX ACK sent
458
459     [ May 20 14:41:07 ] DEV[lora node] |Activation| {A}: None downlink received
460
461     [ May 20 14:41:07 ] DEV[lora node] |Activation| {A}: Unjoined
462
463     [ May 20 14:41:07 ] DEV[lora node] |Activation| {A}: JOIN REQUEST sent
464
465     [ May 20 14:41:07 ] GW[seam-gw]: PUSH DATA send
466
```

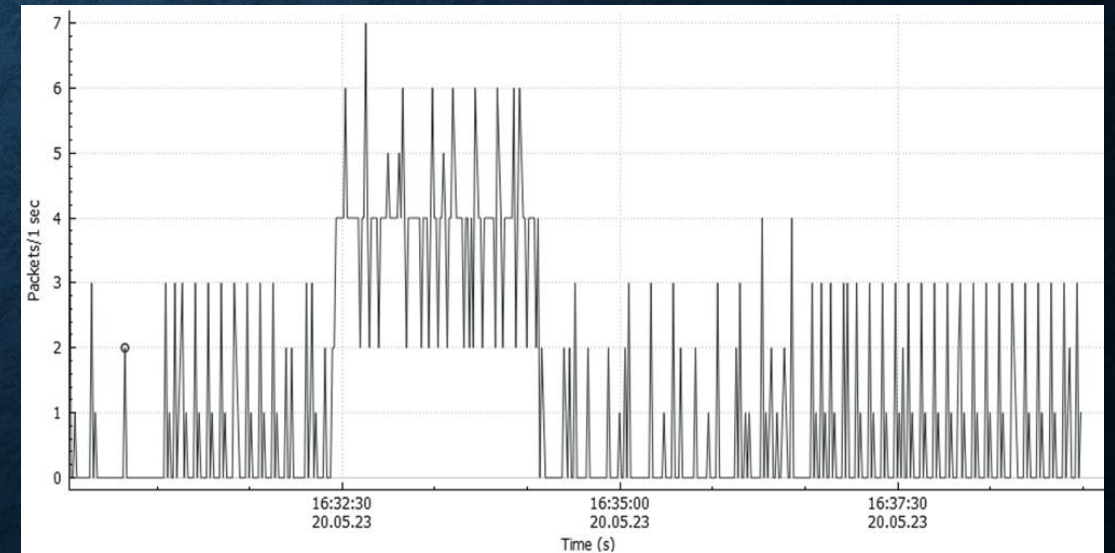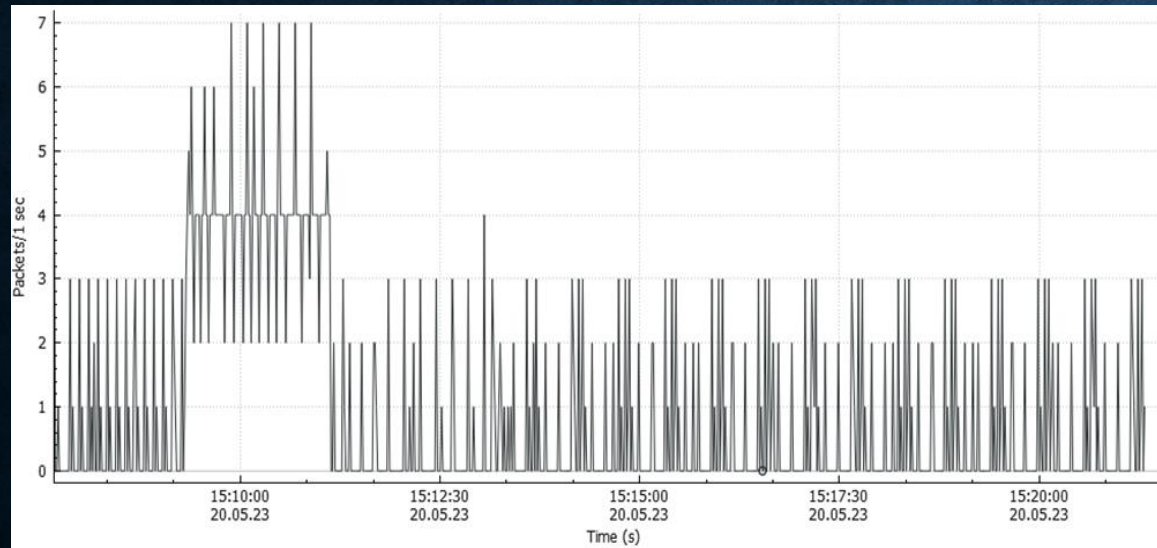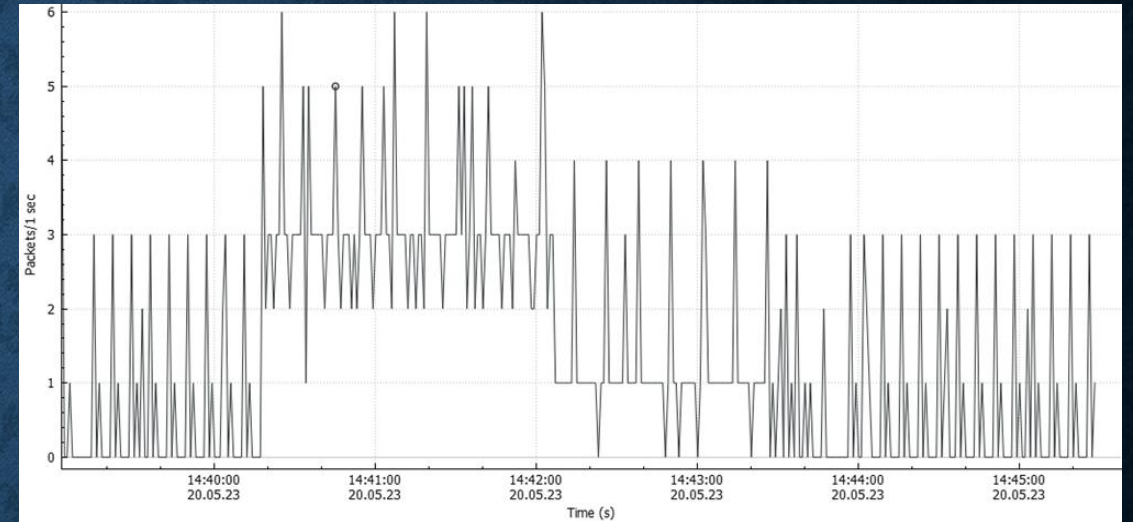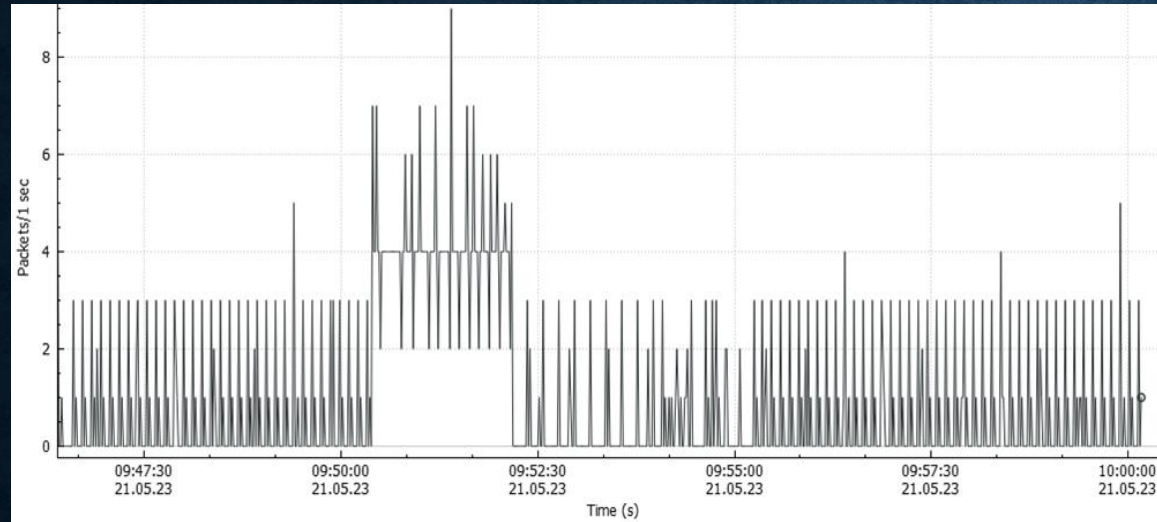| Timestamp	Type	Detail	
2023-05-20 14:22:01	join	DevAddr: 009081de	
2023-05-20 14:21:49	join	DevAddr: 01c0a711	
2023-05-20 14:21:15	join	DevAddr: 01409879	
2023-05-20 14:21:03	join	DevAddr: 000ac429	
2023-05-20 14:20:51	join	DevAddr: 00bcab9e	
2023-05-20 14:20:39	join	DevAddr: 00d0fd60	
2023-05-20 14:20:29	log	Code: UPLINK_F_CNT_RETRANSMISSION	Level: WARNING
2023-05-20 14:20:19	log	Code: UPLINK_F_CNT_RETRANSMISSION	Level: WARNING

KEEP ALIVE FLOODING

TRAFFIC GRAPHS FOR DOS ATTACKS

WORK PROGRESS

Current :

- Master Thesis Draft : with all sections written

- All attack scripts and scenarios updated

- Github repository updated

Next :

- Waiting for review and feedback

- Update implementation and result analysis chapters