



**BLG 433E**

**COMPUTER**

**COMMUNICATIONS**

CRN: 12337

**PROJECT #1**

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**GROUP MEMBERS:**

|                |           |
|----------------|-----------|
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# 1. Implementation

We created 2 thread for each station: stationA, stationB

Thread stationA controls function of A station:

- Control time
- Create AtoB thread
- Update sent value of frame

Thread stationB controls function of B station:

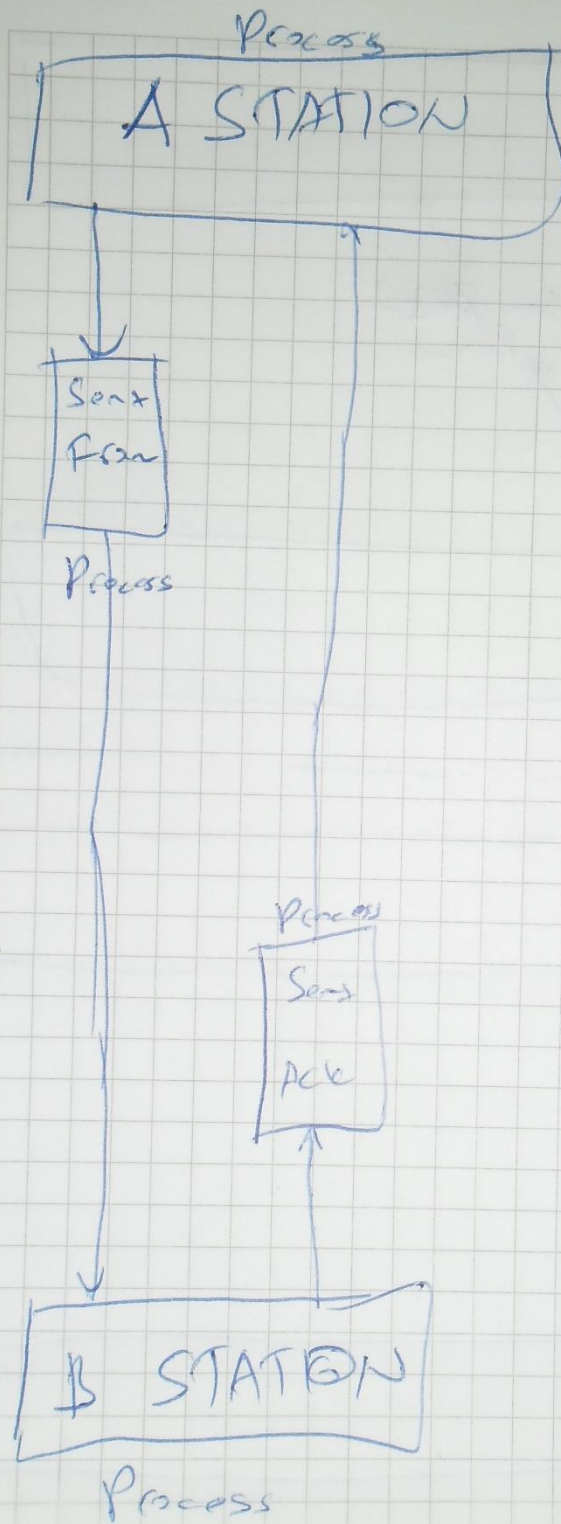
- Control time
- Create BtoA thread
- Update sent value of Ack

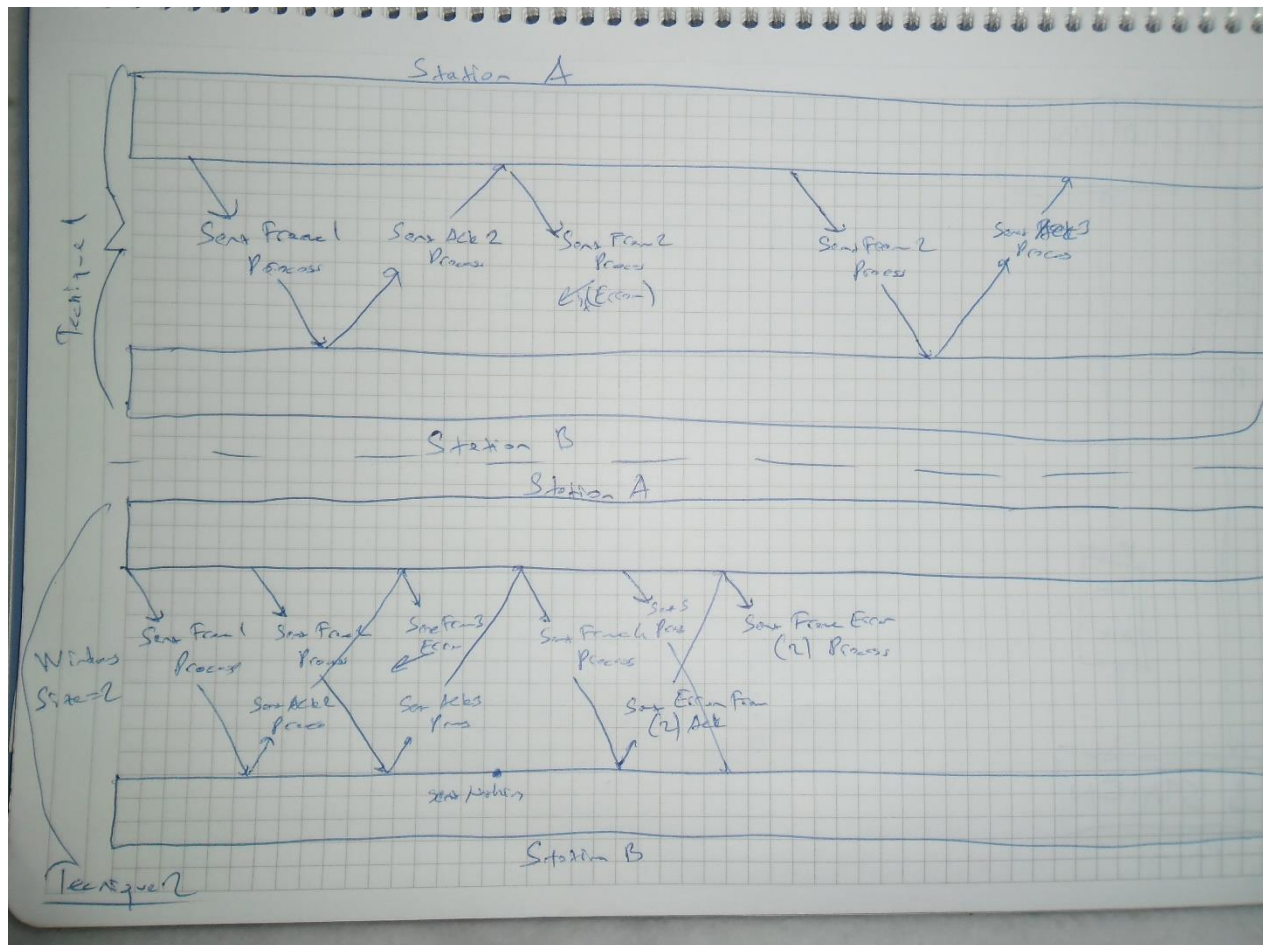
Addition of these thread, we use threads to send frame and ack. One frame is sent to B with AtoB thread by A. This thread controls sending frame event:

- Control time
- Control error
- Update receive value of frame

One Ack is sent to A with AtoB thread by B. This thread controls sending Ack event:

- Control time
- Control error
- Update receive value of Ack





Implementation of technique 1 and 2 are done thanks to these thread.

## 2. Size of Sliding Window in Technique 2

Size of sliding window is number of sending frame in delay route time (540ms). For test data, these values are 4 and 2 so we sent 4 and 2 frame between this times. Each frame is 1 bit and line capacity is 1mbps. So we can send  $1^6$  frame in this time.

### 3. Size of Buffer in Technique 2

Size of buffer is number of receiving frame in delay route time (540ms). For test data, these values are 4 and 2 so we sent 4 and 2 frame between this times. Each frame is 1 bit and line capacity is 1mbps. So we can receive  $1^6$  frame in this time.

### 4. Maximum Windows Size for Technique 2

Windows size  $\leq 2^m$

m = sequential data size

m values for our example = 1000

So we can use windows size = 1000.

### 5. Error Rate – Simulation Time

If error rate is bigger, we lose more time. Because we wait for timeout (550ms).

Lost time =  $550 \times$  number of error

