

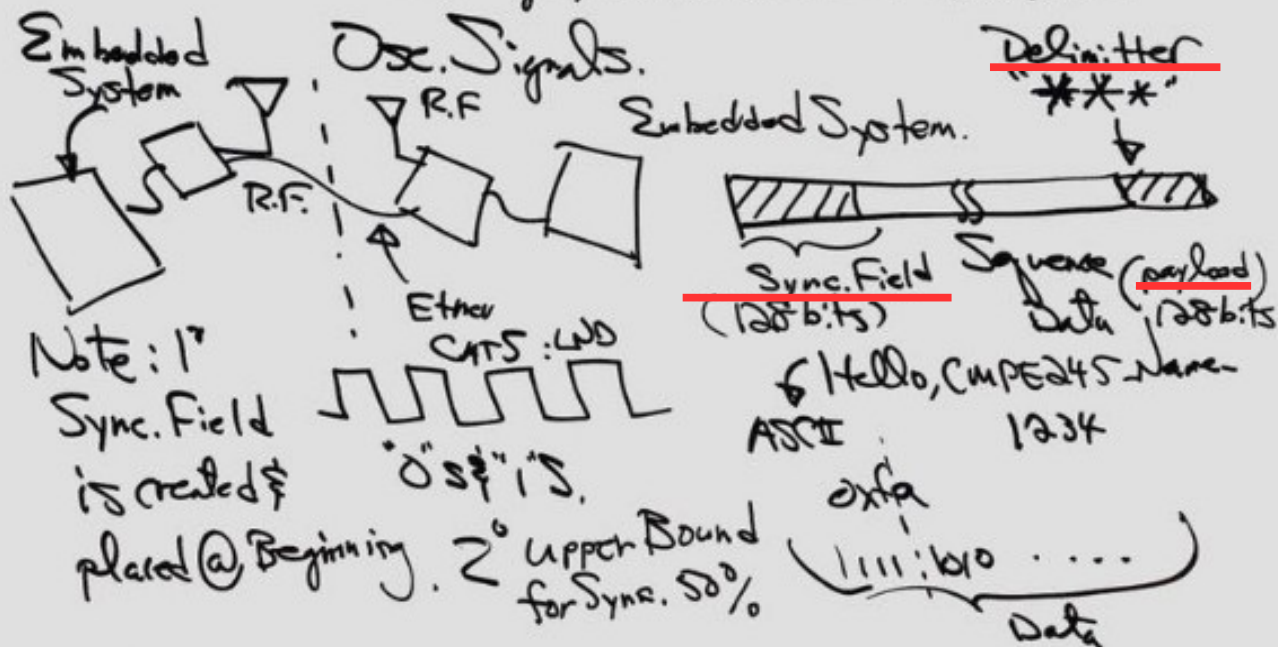
# 9-10-2018 Sync Design

CMPE245 Embedded Wireless Sept. 10, 18  
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 Today's Topics:

1° Sync. Algorithm Design & Prototyping.  $S/N$

Check github/hualili

Example: To Establish Handshaking B/W  
 $N_i$  &  $N_j$ , From D.B.3: Generate



# 9-9-2018 LISA Algorithm

CMPE245 Sept. 10 2018 HL 2/



Step 3. Parse the Payload. By look-up table (ASCII)

Step 4. Check Delimiter "4\*" Symbols.

Question: 1.

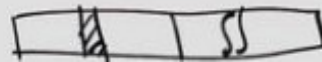
$R_x$  to Decode Sync field.

How to Detect Corruption Bit(s) in the Sync Field? Parity?

Step 1.  $t = t_0$  Communication Starts.

Step 2:  $N_i(R_x)$  listens to  $N_i$  via  $GPP_x(R_x) \rightarrow Tx$  Form  $N_i$  Detect "1010...10 (Total 128 bits)".

Once done, then the next bit (129th) is the starting bit of the payload.



Question: How to handle Corruptions in the Sync Field? yet to Be able to pinpoint to the Starting bit of the Payload?

Counter  $\rightarrow$  129th Bit  $\rightarrow$  "LISA" LINEAR Invariant Sync. Algorithm.

Counter: (Root) 0000...0  
0001...f  
zero crossing (pref) 1111...f  
0101...0x5

0xa0  
0xa1  
...  
0xaf  
0x50  
0x51  
...  
0x5f

Observation 1:

32 Bytes Needed for this

Observation 2: Design. minimum Byte for Sync is 1.

Observation 3:  $\sim$  whose Confidence level is  $1/32$ .