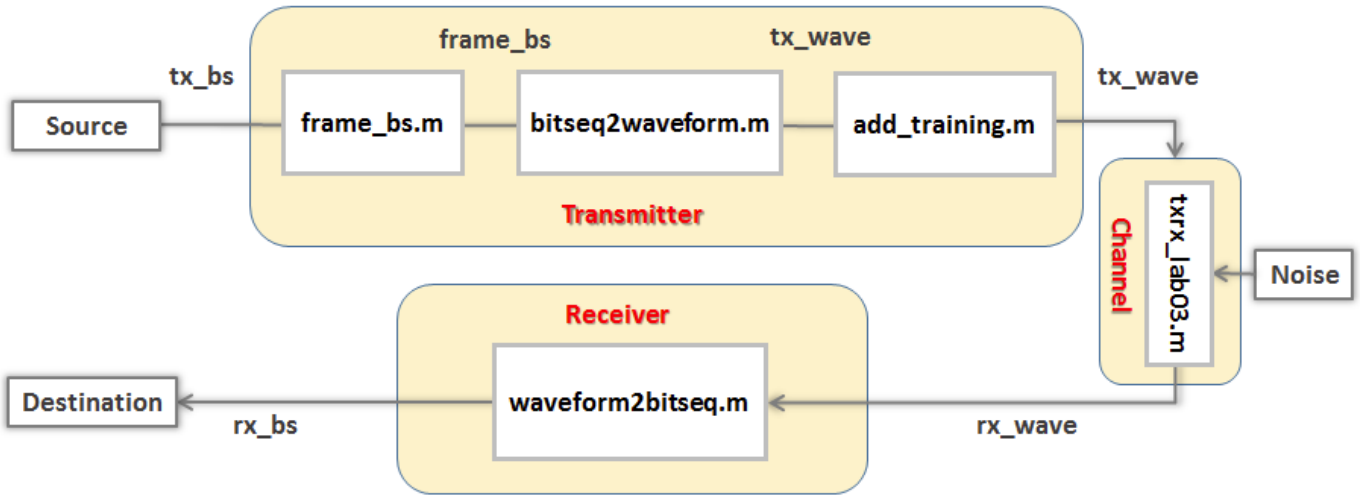
LAB 4 - PERFORMANCE EVALUATION (SANDBOX)

In this task, you will evaluate the performance of a communication system operating at various bit rates. To adjust the bit rate, you will change the bit time in samples per bit (SPB).



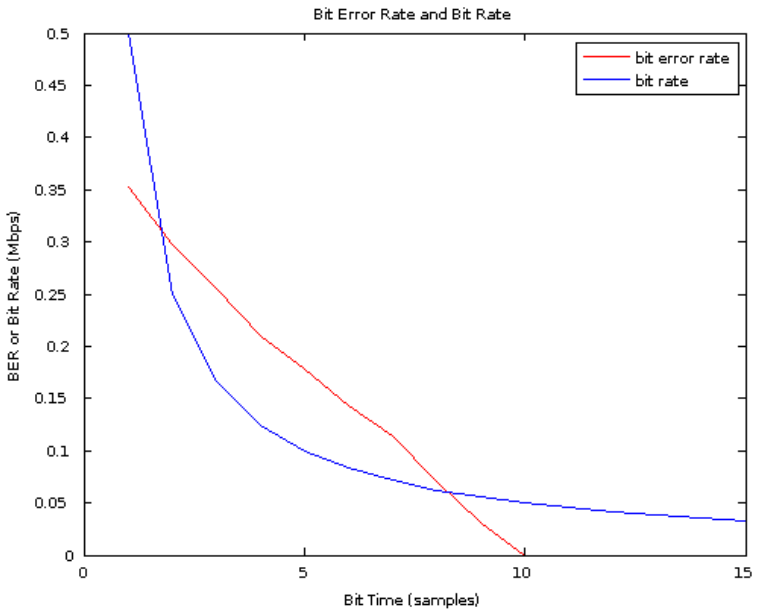

```
1 tx_bs=rand(1,1280)>0.5; % generate sequence of 1280 random bits
2
3 SPBlist = 1:15;             % list of bit times to test
4 num_SPB = length(SPBlist);  % number of bit times to test
5 BER = zeros(1,num_SPB);     % initialize bit error rate array
6
7 for i = 1:num_SPB,         %generate the SPB list
8     SPB = SPBlist(i);
9     tx_wave = format_bitseq(tx_bs,SPB);  % create waveform following protocol
10    rx_wave = txrx_lab03(tx_wave);       % simulate channel
11    rx_bs = waveform2bitseq_lab04(rx_wave,SPB);  % decode received waveform
12    BER(i) = compute_BER(tx_bs,rx_bs);  % compute the BER
13 end
14
15 figure(1);
```

Correct

```
bitrate = 0.5./SPBlist;
plot(SPBlist,BER,'r');
hold on;
plot(SPBlist,bitrate,'b');
```

Help

Figure 1



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Help