**Question - Acquisition**

1. How to determine IFfrequency and sampling frequency
2. File types: real and I/Q, why (-3,-1,1,3)
3. Why 11ms/11 or 10ms-exclusively spreading codes needed for frequency estimation?
4. Data – mean\_value to omit bias at frequency = 0? Why
5. “acquisition.m” Line136 what is it? With frequency = 1? X-axis value? Later multiply with the carrier-frequency of different bins?
6. Why need 2 code-length of signal? (full code cross-correlation?)
7. *I* represent in-phase part as codes on cos() branch [Re], *Q* represents quadrature part as codes on sin() branch [Im]?
8. Sample-wise multiplication can encode or decode signals?
9. “ acquisition.m” Line220 find indexes of 2 chip-length?
10. How to determine acquisition threshold
11. When obtaining frequency, why ½ total f-bins are checked, need twice frequency to recover signal?
12. What’s the x-axis in FFT(x,N)? larger than half is complex part? With negative frequency?
13. Why code chip rate still 1.023Hz in IF?
14. Discriminator is the manipulation on I & Q to determine code/carrier phase?

**To be confirmed**

1. What FFT exactly doing?
2. Multiplication (with conjugate) in frequency-domain = correlation in time-domain?
3. Details on C/A code generation
4. The process from original frequency to IF

**Question - Tracking**

1. Filter coefficient, what it is doing? How is the number selected? (Maybe Section 7.3?)
2. What loop filter did? Similar to feedback control?
3. What discriminator did? finding the error during tracking and keep a correct frequency in carrier & code? (Check equation and derivations for mathematical meaning)
4. What is baseband?
5. Why after mix collected data to baseband, [Re] is qBasebandSignal, [Im] is iBasebandSignal?
6. Why carrier frequency is adding NCO, code frequency is minus NCO?
7. How CNR calculated by variance summing method (VSM)?