组会报告

徐益

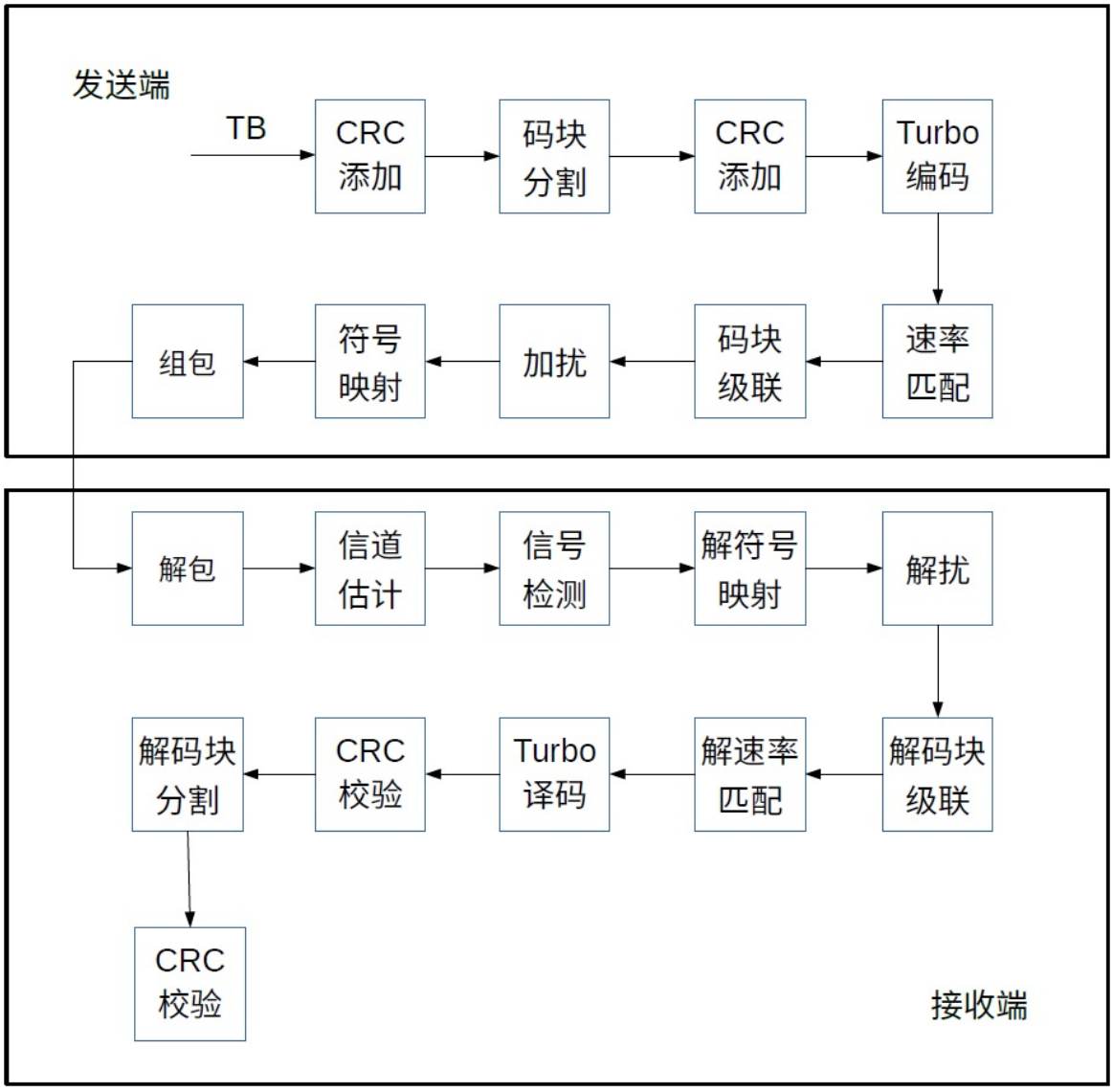
2018/4/19

1 本周学习内容

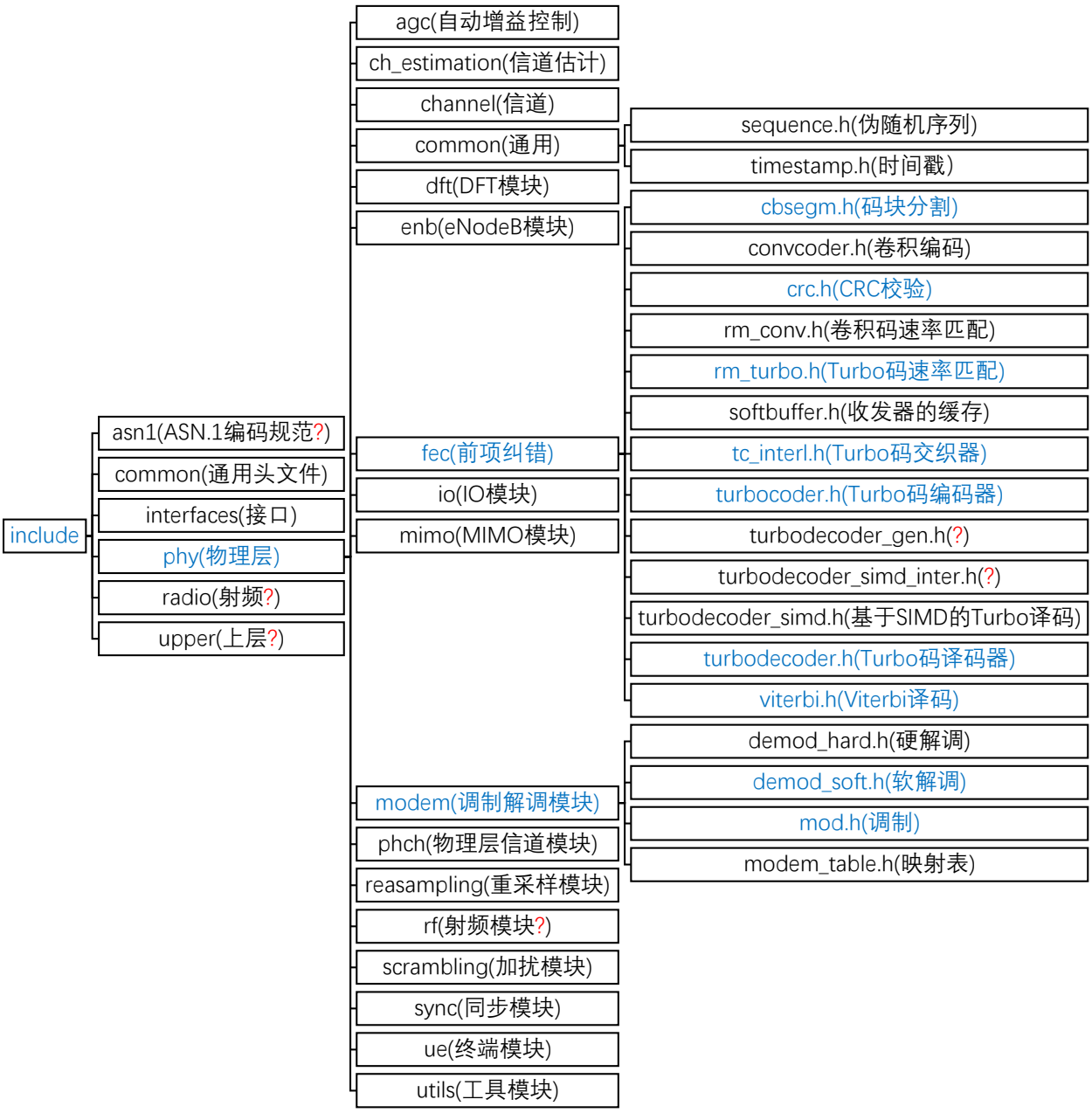
1. 阅读数据处理说明文档（服务器），学习 srsLTE 开源库
2. 配置 Linux 运行环境
3. 3GPP TS 38.212

2 数据处理说明文档（服务器）

2.1 服务器数据处理流程图



2.2 srsLTE 开源库目录结构



3 配置 Linux 开发环境

3.1 Intel MKL 在 Linux 中的安装

1. 下载 https://software.intel.com/en-us/mkl
2. 运行 install.sh，按默认路径安装
3. 在 /.bashrc 末尾添加

```
source /opt/intel/bin/compilervars.sh intel64
source /opt/intel/compilers_and_libraries_2018.2.199/linux/bin/
    compilervars.sh intel64
```

3.2 运行结果

```
sherlockhsu@lab: /media/sherlockhsu/本地磁盘/DataProcess(Server)/single
sherlockhsu@lab:/media/sherlockhsu/本地磁盘/DataProcess(Server)/single$ ./main
double:8 float:4 int16_t:2
start running...

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1.Error rate statistics

test 1 CQI = 15 SNR = 15.00 sigma = 1.778279e-01 : bits error:0.180446(1154280/6
396800), blocks error:1.000000(80/80)

2.Running time statistics(10 subframes):

CRC attachment     :  0.0049s ( 7.43%)
Cb segmentation    :  0.0000s ( 0.02%)
Turbo encoder      :  0.0134s (20.45%)
TX Rate matching   :  0.0215s (32.98%)
Modulation         :  0.0183s (28.02%)
Packing            :  0.0022s ( 3.31%)
Others in TX       :  0.0051s ( 7.78%)

Channel estimation :  0.1481s (23.29%)
Signal Detection   :  0.1287s (20.23%)
Link adaptation    :  0.0325s ( 5.11%)
Demodulation       :  0.0347s ( 5.46%)
RX Rate matching   :  0.0084s ( 1.33%)
Turbo decoder      :  0.2486s (39.07%)
CRC check          :  0.0050s ( 0.79%)
Others in RX       :  0.0301s ( 4.73%)

Total time in TX   :  0.0653s
Total time in RX   :  0.6362s

Throughput in TX   : 97.9452Mbps
Throughput in RX   : 10.0547Mbps

sherlockhsu@lab:/media/sherlockhsu/本地磁盘/DataProcess(Server)/single$
```
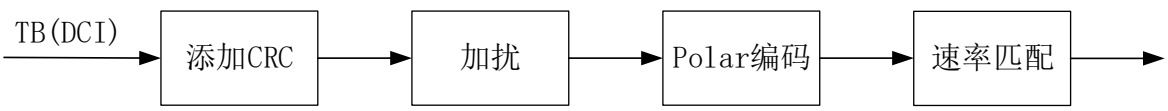

4 3GPP TS 38.212

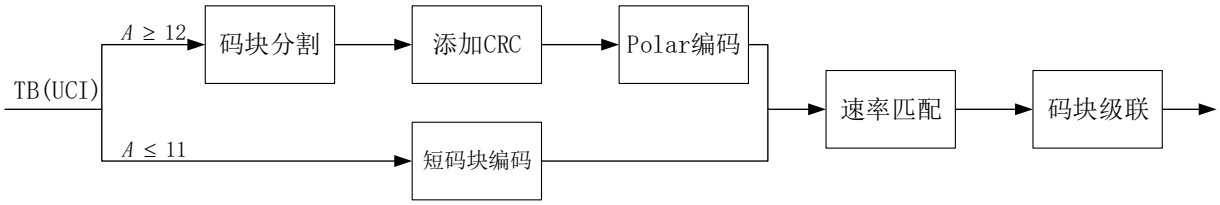
4.1 控制信息的编码策略

Control Information	Coding scheme
DCI	Polar code
UCI	Block code
	Polar code

4.2 发送端 DCI 信号处理流程



4.3 发送端 UCI 信号处理流程



5 存在问题

1. 实现的具体部分：所有信道还是部分信道?
2. 加扰的位置? RNTI?

6 下周计划

1. 继续阅读 3GPP TS 38.212
2. 尝试编写码块分割模块