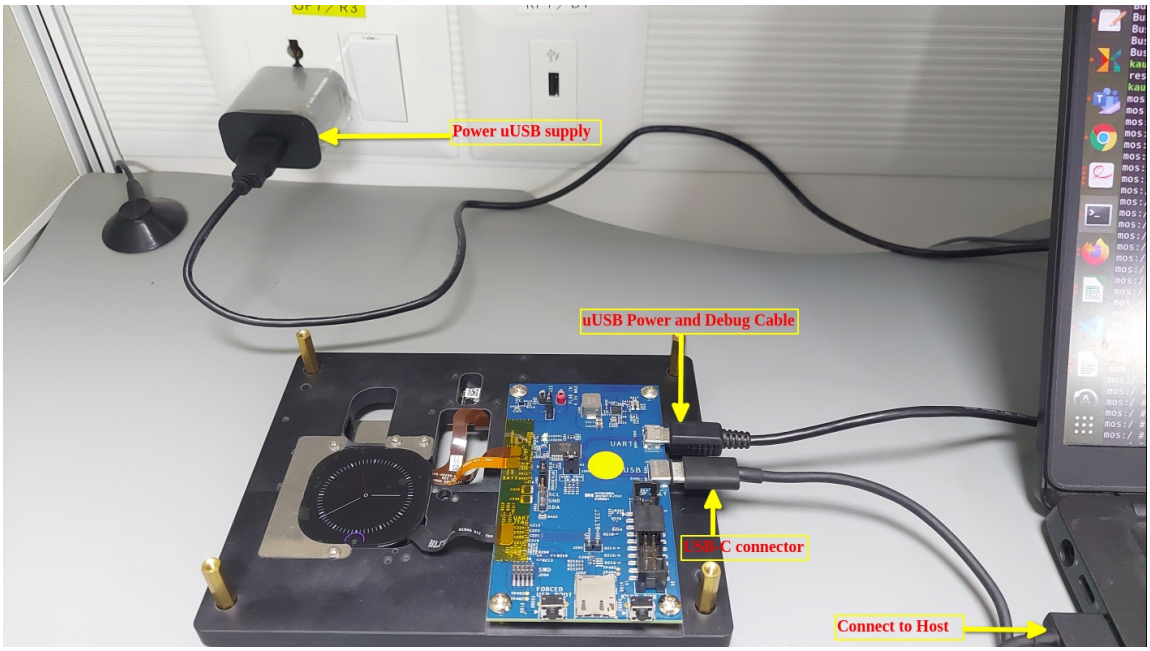
SOC IMPLEMENTATION



Startup Init Script :

/home/admin/mos/device/oculus/mos/rootdir/etc

Android services:

Facebook Service:

/home/admin/mos/frameworks/base/services/core/java/com/facebook/wearable

commandrouter service:

/home/admin/mos/vendor/oculus/software/services/commandrouter

sensor implemenation:

/home/admin/mos/vendor/oculus/sensorHal/

BLUECAPTURE UTILITY RUNNING

Step 1: Connect USB-Type-B with Power Socket and USB-Type-C to Host Machine and press power button to turn on the NED board

Step 2:get the adb of the Board using below commands.

$sudo adb start-server
$adb devices
$adb root
$adb shell

```
kaushendra@AHMLPT1619:~$ sudo adb start-server
kaushendra@AHMLPT1619:~$ adb devices
List of devices attached
a3340df0        device

kaushendra@AHMLPT1619:~$ adb devices
List of devices attached
a3340df0        device

kaushendra@AHMLPT1619:~$ adb devices
List of devices attached
a3340df0        device

kaushendra@AHMLPT1619:~$ adb root
restarting adbd as root
kaushendra@AHMLPT1619:~$ adb shell
mos:/ #
mos:/ #
mos:/ #
mos:/ #
mos:/ #
mos:/ #
mos:/ # ls -lrt
total 80
dr-xr-xr-x 463 root   root          0 1970-01-01 00:00 proc
drwxr-xr-x   5 root   root          0 1970-01-01 00:00 config
dr-xr-xr-x  12 root   root          0 1970-01-01 00:00 sys
drwxr-xr-x  21 root   root        420 1970-01-01 00:00 apex
dr-xr-xr-x   3 root   root          0 1970-01-01 00:00 acct
drwxr-xr-x   9 root   root        200 1970-01-01 00:00 linkerconfig
```

Step 3: Open another terminal to access bleucapture utility through adb using below command.

$adb logcat -v color | grep -i bluecapture

Step 4: run the bluecapture utility on board for sensor data access as given below.

$bluecapture -a -v

Usage: bluecapture
 -a : start ALS streaming
 -c : start ALT streaming
 -v : print logging to console

```
kaushendra@AHMLPT1619:flash$ adb shell
mos:/ #
mos:/ #
mos:/ #
mos:/ #
mos:/ #
mos:/ # bluecapture -a -v
```

Step 5: Verified the Bluecapture logs using below command.

```
kaushendra@AHMLPT1619:FRL$ adb logcat -v color |  grep -i bluecapture
06-30 16:57:53.942   893   893 D commandrouter: onFlatPipeConnect, socServiceName = bluecapture, pfd = 66
06-30 16:57:53.944   893  3756 D commandrouter: SocServiceHandle::onInitMessage, SoC Service = bluecapture, clientType = SUBSCRIPTION, appType = 1, name = msgs:sensors:Als
06-30 16:57:53.944   893  3756 D commandrouter: SocServiceHandle::onTopicMessage, SoC Service = bluecapture, appType = 1, type = TOPIC_START, seq = 0, payloadLen = 0, nanoseconds = 0,
 payload.size() = 0
06-30 16:57:53.944   893  3756 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = bluecapture, subscribing to topicName = msgs:sensors:Als
06-30 16:57:53.971   893  3756 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = bluecapture, topic subscription successful. topicName = msgs:sensors:Als, subscriptio
n ID = 9
```

Step 6: We found a warning displaying the mismatch of topics from SOC and MCU side.

```
06-30 15:39:32.412   922  3494 I CameraService: CameraService::connect call (PID -1 "com.facebook.wearable.apps.camera", camera ID 1) for HAL version default and Camera API version 1
06-30 15:39:32.425   922  3494 I CameraHardwareInterface: Opening camera 1
06-30 15:39:32.428   575   604 D audio_hw_primary: adev_set_parameters: enter: cameraFacing=front
06-30 15:39:32.453   578  1035 I CamDev@1.0-impl: Opening camera 1
06-30 15:39:32.478   588   588 V Sensors : McuSensor (OnWristDetection) batched
06-30 15:39:32.478   588   588 V Sensors : McuSensor (OnWristDetection) Sampling period 66667 set
06-30 15:39:32.478   588   588 V Sensors : McuSensor (OnWristDetection) Max batch latency set to 0
06-30 15:39:32.478   588   588 V Sensors : updateSensorConfigSampling: samplingPeriodUs = 66667
06-30 15:39:32.478   588   588 V Sensors : updateSensorConfigReportLatency: maxReportlatencyUs = 0
06-30 15:39:32.478   588   588 V Sensors : McuSensor (OnWristDetection) setSensorBatchingParamsAsync()  with samplingPeriodUs (66667) and maxReportLatencyUs(0)
06-30 15:39:32.479   588   588 V Sensors : updateSensorConfigStatus:  status = 1
06-30 15:39:32.479   588   888 V Sensors : McuSensor (OnWristDetection) cached mcuPeriodUs and batchLatencyUs for start call
06-30 15:39:32.480   588   588 V Sensors : McuSensor (OnWristDetection) enableSensorAsync
06-30 15:39:32.481   588   888 V Sensors : McuSensor (OnWristDetection) sent topic message start
06-30 15:39:32.481   588   888 V Sensors : McuSensor (OnWristDetection) sent control message 1
06-30 15:39:32.481  5305  5373 D commandrouter: SocServiceHandle::onTopicMessage, SoC Service = OnWristDetection, appType = 2, type = TOPIC_START, seq = 0, payloadLen = 0, nanoseconds
 = 0, payload.size() = 0
06-30 15:39:32.481  5305  5373 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = OnWristDetection, subscribing to topicName = msgs:sensors:Owd
06-30 15:39:32.503   578  1035 I QCamera : <HAL><INFO> getCameraInfo: 344: Camera id 1 API version 256
06-30 15:39:32.503   578  1035 I QCamera : <HAL><INFO> getCamInfo: 14451: camera 1 resource cost is 100
06-30 15:39:32.503   578  1035 I QCamera : <HAL><INFO> cameraDeviceOpen: 409: Open camera id 1 API version 256
06-30 15:39:32.512   578  1035 I QCamera : <HAL><INFO> getInstance: 98: E s_pInstance->instance_count 1
06-30 15:39:32.515  5470  5470 I Perf    : Connecting to perf service.
06-30 15:39:32.519   377   377 E SELinux : avc:  denied  { find } for pid=5470 uid=10031 name=vendor.perfservice scontext=u:r:configuration_app:s0:c512,c768 tcontext=u:object_r:vendor
_perf_service:s0 tclass=service_manager permissive=0
06-30 15:39:32.519  5470  5470 E Perf    : Perf service is now down, set sPerfService as null.
06-30 15:39:32.520  5470  5470 E Perf    : Perf service is unavailable.
06-30 15:39:32.522  1285  1790 I MediaFocusControl: requestAudioFocus() from uid/pid 10045/5439 clientId=android.media.AudioManager@6b30f23com.facebook.wearable.apps.common.audiofocus
.WearableAudioFocusManager$audioFocusChangeListener$1@ec4c20 callingPack=com.facebook.wearable.apps.camera req=2 flags=0x0 sdk=30
06-30 15:39:32.525  5305  5373 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = OnWristDetection, topic subscription successful. topicName = msgs:sensors:Owd, subscr
iption ID = 19
06-30 15:39:32.526  5305  5373 D commandrouter: SocServiceHandle::onServiceMessage, SoC Service = OnWristDetection, appType = 1, type = SVC_REQ, clientId = 0, token = 0, payloadLen =
32, result = 0, payload.size() = 32
06-30 15:39:32.526   378   378 E SELinux : avc:  denied  { find } for interface=vendor.qti.hardware.perf::IPerf sid=u:r:configuration_app:s0:c512,c768 pid=5470 scontext=u:r:configurat
ion_app:s0:c512,c768 tcontext=u:object_r:vendor_hal_perf_hwservice:s0 tclass=hwservice_manager permissive=0
06-30 15:39:32.528  1020  1020 I mcucapture:  144964 [warning] {UBR }: Topic Manager msgs:sensors:Owd: Type doesn't match!
06-30 15:39:32.529  1020  1020 I mcucapture:  144970 [warning] {UBB }: Existing topic type: merlot:msgs:Owd
06-30 15:39:32.529  1020  1020 I mcucapture:  144976 [warning] {UBB }: New topic type: msgs.sensors.Owd
06-30 15:39:32.529  1020  1020 I mcucapture:  144981 [info    ] {UBB }: Registered subscription 0x301b764c for Node 'merlot:soc': Node ID 9, Topic 'msgs:sensors:Owd', Type 'msgs.sensor
s.Owd'
06-30 15:39:32.529  1020  1020 I mcucapture:  144994 [info    ] {UBL }: BlueLink 'SPI': Registered local subscription: Name 'msgs:sensors:Owd', Handle 0x301b764c, ID 0x0009
```

AUDIOCAPTURE UTILITY RUNNING

Step 1: we tried to run the audio-test using audiocapture utility

$audiocapture

Usage: audiocapture
 -s,--streaming : Enable streaming pin (0). streaming.wav
 -e,--earcon : Enable earcon pin (1). earcon.wav
 -m,--mic : Enable mic pin (2). mics.wav
 -i,--loopback : Enable loopback pin (3). lpbk.wav
 -p,--speaker : Enable speaker pin (4). speaker.wav
 -b,--voip : Enable voip pin (5). voip.wav
 -r,--videorecord : Enable videorecord pin (6). videorecord.wav
 -a,--assistant : Enable assistant pin (7). assistant.wav
 -t : time/duration in sec
 -y : split channels, each channel is written to a separate ch_<name>.wav file
 -l : Livingston Capture. Enables mic (CAPTURE) and speaker (RENDER/LOOPBACK) pins
 -v : verbose message logs

$audiocapture -m -v

```
255|mos:/ # audiocapture -m -v
D: Creating Subscriber for topic: stella:audio:mic:data
D: Sent MCU Info Request
D: Sent Mic Calibration Request
D: MCU Info Async Response Received
E: Unable to verify mcu info response
D: Mic Calib Async Response Received
E: Unable to verify mic calib response
```

Step 2: Verified the audiocapture logs using below command

```
kaushendra@AHMLPT1619:FRL$ adb logcat -v color |  grep -i audiocapture
06-30 17:08:44.817   893   893 D commandrouter: onFlatPipeConnect, socServiceName = audiocapture, pfd = 66
06-30 17:08:44.819   893  3958 D commandrouter: SocServiceHandle::onInitMessage, SoC Service = audiocapture, clientType = SERVICE_CLIENT, appType = 3, name = stella:audio:control_raw_
datacollection
06-30 17:08:44.847   893  3958 D commandrouter: SocServiceHandle::onInitMessage, SoC Service = audiocapture, clientType = SERVICE_CLIENT, appType = 2, name = stella:audio:get_mic_cali
b
06-30 17:08:44.873   893  3958 D commandrouter: SocServiceHandle::onInitMessage, SoC Service = audiocapture, clientType = SERVICE_CLIENT, appType = 1, name = stella:mcu:get_mcu_info
06-30 17:08:44.900   893  3958 D commandrouter: SocServiceHandle::onInitMessage, SoC Service = audiocapture, clientType = SUBSCRIPTION, appType = 4, name = stella:audio:mic:data
06-30 17:08:44.900   893  3958 D commandrouter: SocServiceHandle::onServiceMessage, SoC Service = audiocapture, appType = 1, type = SVC_REQ, clientId = 0, token = 0, payloadLen = 12,
result = 0, payload.size() = 12
06-30 17:08:44.900   893  3958 D commandrouter: SocServiceHandle::onServiceMessage, SoC Service = audiocapture, appType = 2, type = SVC_REQ, clientId = 0, token = 0, payloadLen = 12,
result = 0, payload.size() = 12
06-30 17:08:44.900   893  3958 D commandrouter: SocServiceHandle::onTopicMessage, SoC Service = audiocapture, appType = 4, type = TOPIC_START, seq = 0, payloadLen = 0, nanoseconds = 0
, payload.size() = 0
06-30 17:08:44.901   893  3958 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = audiocapture, subscribing to topicName = stella:audio:mic:data
06-30 17:08:44.912   893   926 D commandrouter: audiocapture (1, stella:mcu:get_mcu_info): <ServiceResponse> FORWARDED (remote -> local) CR token ID = 0, service client ID = 31, token
 ID = 82, result = 105
06-30 17:08:44.949   893   926 D commandrouter: audiocapture (2, stella:audio:get_mic_calib): <ServiceResponse> FORWARDED (remote -> local) CR token ID = 0, service client ID = 30, to
ken ID = 83, result = 105
06-30 17:08:44.949   893  3958 D commandrouter: SocServiceHandle::onSubscribeTopic, SoC Service = audiocapture, topic subscription successful. topicName = stella:audio:mic:data, subsc
ription ID = 10
```