**Implement 5G SA Cell Broadcast Center Function's (CBCF) Namf\_Communication service's**

The Cell Broadcast Center Function (CBCF) utilizes the Namf\_Communication service from the Access and Mobility Management Function (AMF) to deliver warning messages to the User Equipment (UE) via the radio access network (RAN).

## Prerequisites

* JDK 17
* Maven
* Spring Boot 3+
* Rest Knowledge
* Tomcat 10
* Eclipse
* Postman
* Basic Knowledge on 5G Networking

## Create Namf Communication Service Spring boot project

By using Spring initialzr, I created a namf-communication-service war project by adding the required dependencies for namf communication-service.

Ex: web, web flux, webmvc-ui

## Understanding the CBCF & AMF Mobility technology

I referred multiple documents to understanding the CBCF and AMF then I build the NonUeMessageTransfer, NonUeN2InfoSubscribe, NonUeN2InfoUnsubsribe rest Apis.

Reference:

<https://dstest.info/RestDict/Dictionary/4620.html>

<https://www.etsi.org/deliver/etsi_ts/129500_129599/129518/15.01.00_60/ts_129518v150100p.pdf>

## Build War file

I ran the mvn clean install command on namf-communication-service package to build war file

## Deploy the War file into tomcat

After generating the war file, I copied the war file into tomcat webapp folder and started the tomcat.

## Open Swagger-UI

Open the below url to see the all rest api’s and schemas.

[http://localhost:8080/namf-communication-service/swagger-ui/index.html - /](http://localhost:8080/namf-communication-service/swagger-ui/index.html#/)

## NonUeMessageTransfer Rest Api

**Request Payload:**

POST /namf-communication-service/cbcf/non-ue-n2-messages/transfer HTTP/1.1

Host: localhost:8080

Content-Type: application/json

Content-Length: 601

{

"n2Information": {

"n2InformationClass": "PWS",

"smInfo": {

"pduSessionId": 64,

"n2InfoContent": {

"ngapMessageType": 30,

"ngapIeType": "PDU\_RES\_SETUP\_REQ",

"ngapData": {

"contentId": "test-contentId"

}

},

"getsNssai": {

"sst": 20,

"sd": "0x123456"

},

"homePlmnSnssai": {

"sst": 20,

"sd": "0x123456"

},

"iwkSnssai": {

"sst": 20,

"sd": "0x123456"

},

"subjectToHo": true

}

},

"supportedFeatures": "0x12AF",

"callAmfEndPoint": false

}

**Response:**

{

"n2InformationTransferRspData": {

"result": "success",

"pwsRspData": {

"ngapMessageType": 22,

"serialNumber": 123,

"messageIdentifier": 12345,

"unknownTaiList": **null**

},

"supportedFeatures": **null**

},

"status": "accepted"}

## NonUeN2InfoSubscribe Rest Api

**Request Payload:**

POST /namf-communication-service/cbcf/non-ue-n2-messages/subscriptions HTTP/1.1

Host: localhost:8080

Content-Type: application/json

Content-Length: 258

{

"anTypeList": [

{

"accessType": "3GPP\_ACCESS"

}

],

"n2InformationClass": "SM",

"n2NotifyCallbackUri": "n2NotifyCallbackUri",

"nfId": "UUID-1",

"supportedFeatures": "string",

"callAmfEndPoint": false

}

**Response:**

{

"subscriptionId": "subid-1234",

"status": "subscribed"

}

## NonUeN2InfoSubscribe Rest Api

**Request Payload:**

DELETE /namf-communication-service/cbcf/non-ue-n2-messages/subscriptions/subid-1234 HTTP/1.1

Host: localhost:8080

**Response:**

204 No Content

{

}

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