
Title*: Demo for PoC#8

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input for ENI
Committee*:

Contribution For*:	Decision	
	Discussion	
	Information	

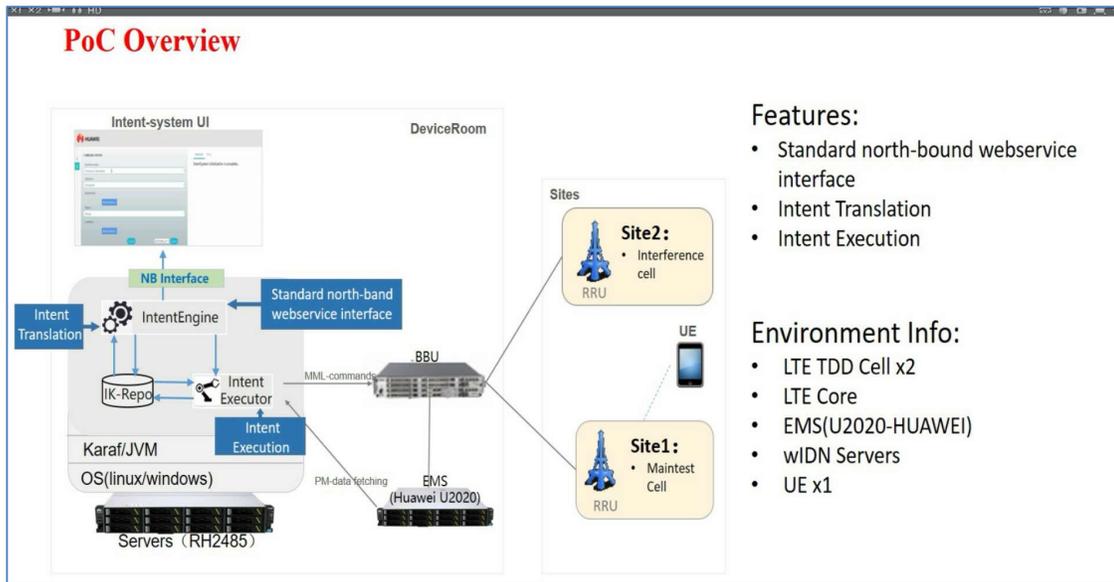
Submission date*: 2020-09-17

Meeting & Allocation: **ENI#15-Remote -**
Relevant WI(s), or deliverable(s):

Decision requested:	Please approve
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ABSTRACT: *This CR contains demo for the PoC#8, and it is presented in ENI #15.*

Video description



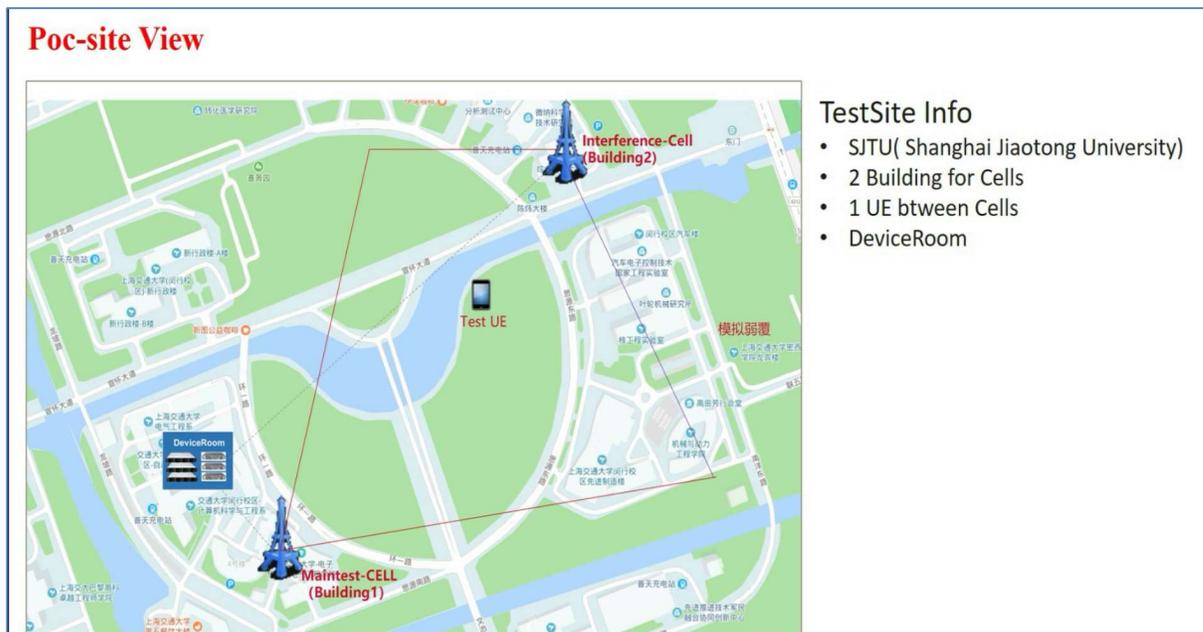
This is overview of our poc project.

We are going to verify the three features of the intent system: the northbound interface, the intent translation and the intent maintenance.

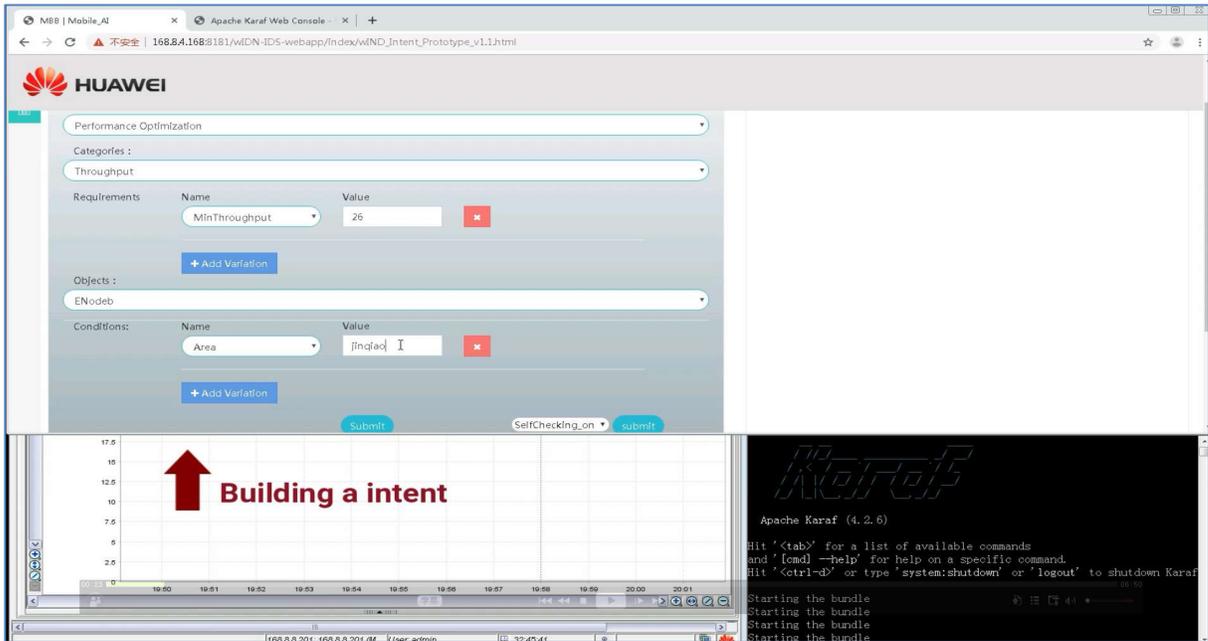
So we designed an end-to-end system to do this.

This is the main components of our system. We used two LTE TDD cell environments, one LTE core network, one EMS, one UE and one server environment for the operation intention system.

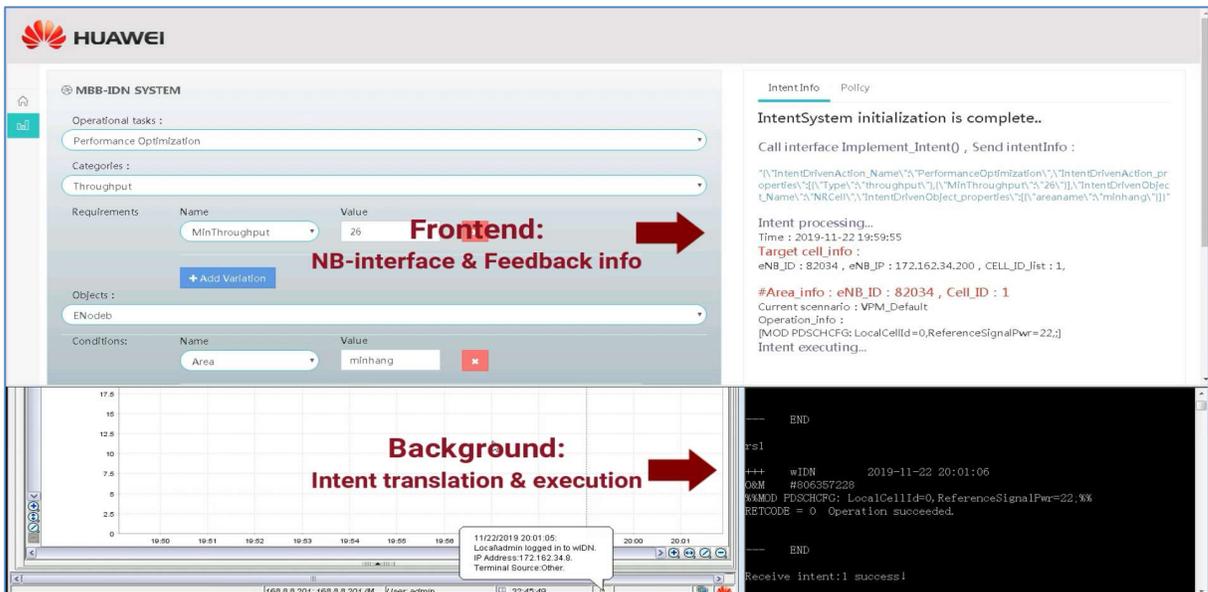
Our intent system consists of several software modules: the intent engine modules, the intent database modules, and the intents execution modules. which provide the northbound operation user interfaces, the intent translation, and the intent execution.



This is our test site map and deployment environment overview, we set up a test field in Shanghai jiaotong university , and put two cells(one for test, one for interference) at the top of two buildings , they are all connected to equipment room, UE is used to do business and connecting the testcell, the above is our basic environment.



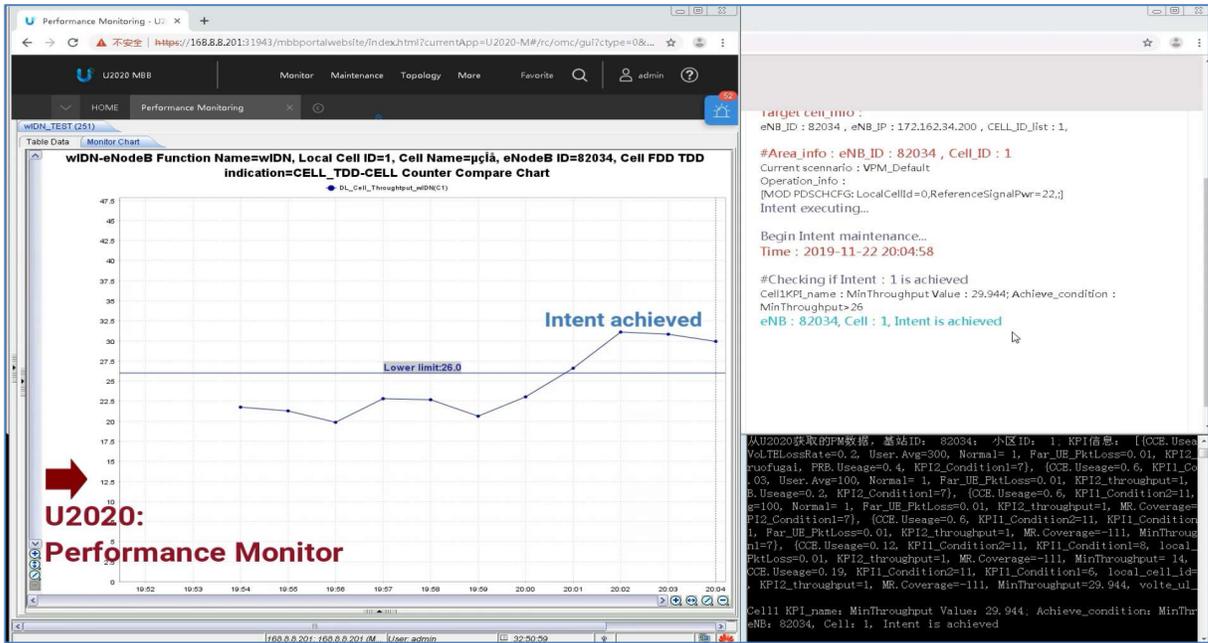
In Scenario 1, we will show the basic intent translation and execution, we implement the north-bound user interfaces and now we build a intention to optimize the throughput rate,first choose the corresponding optimization requirements, like the choice of the intake rate of 26, and select the target base station for enb.then submit to execute the intention.



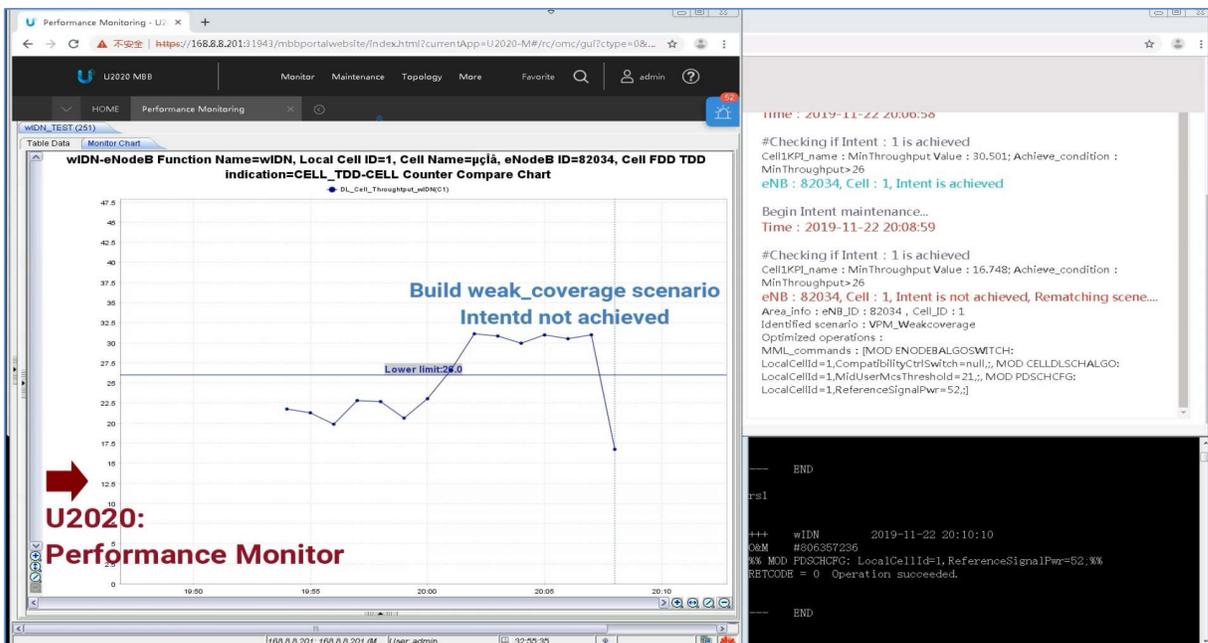
In the back-end, intent engine module receives the intents through north-bound interface, extracts the key-information from the intent(eg. IntentAction-info, intentObject-info) , which can be used to query the intent-database for intent-translation, with the contents from intent-database, intent engine will get the optimization commands and target base staion information, we can see all of them in the console.

After intent-translation, intent-engine will send the optimization commands to intent-execution module, which Responsible for connecting the target base stations and executing commands

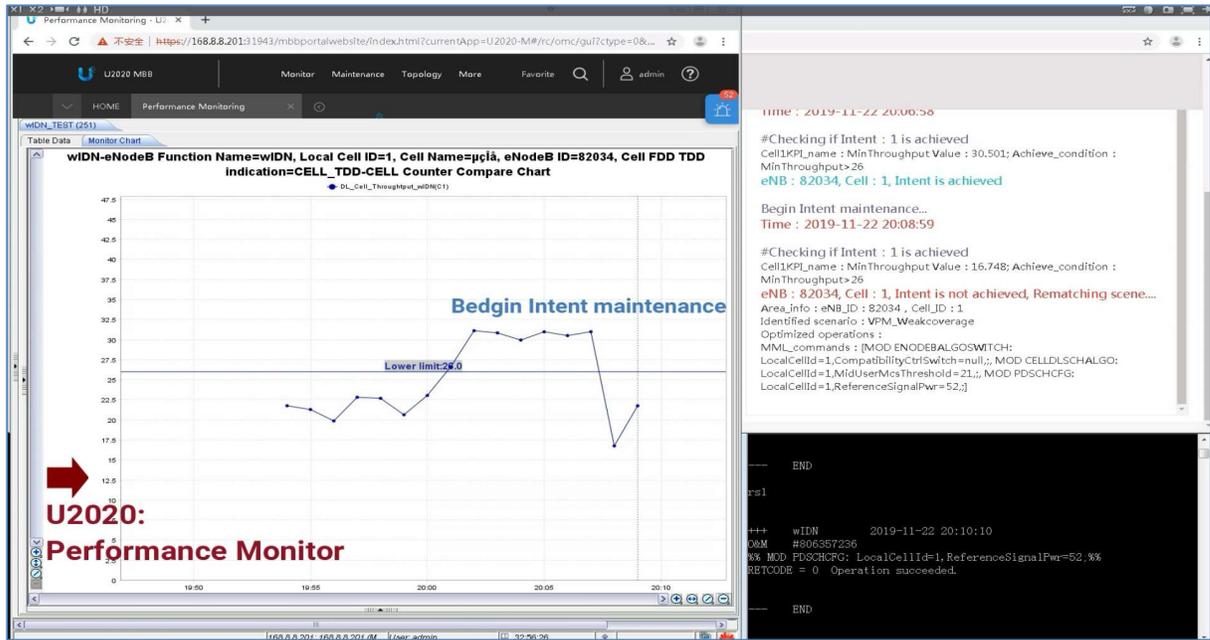
At the same time, the front end will also receive the response information of intended execution returned by the background, and print out the intent execution info (commands and target base station info) .



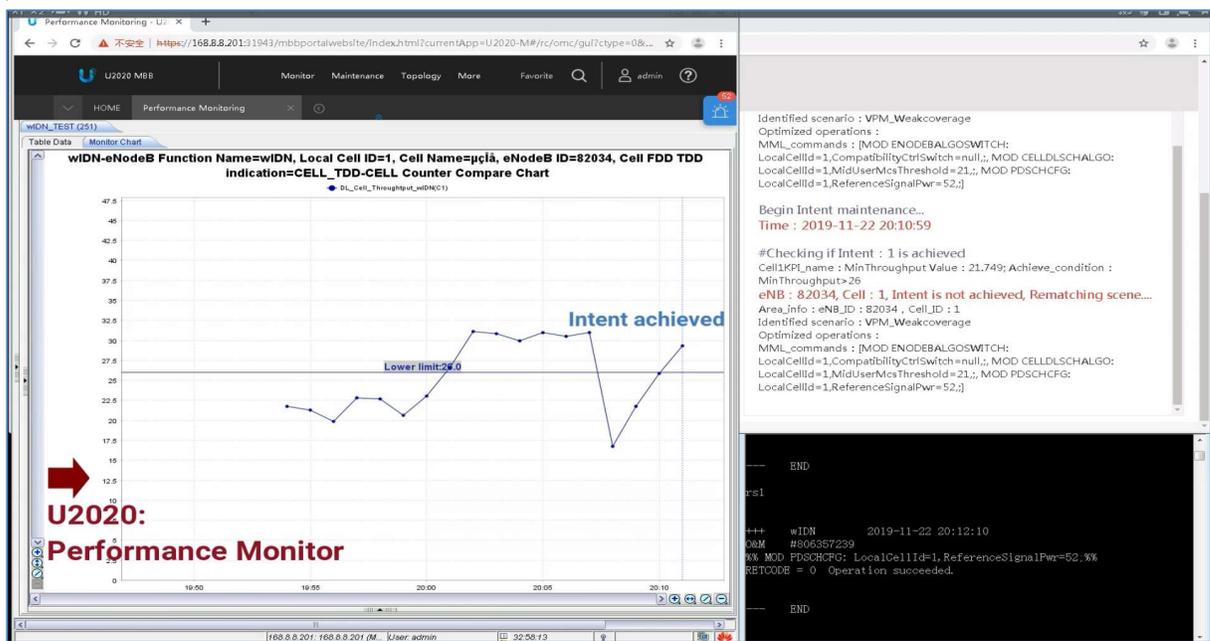
After that, we can observe the throughput rate of the target cell of the wireless environment through the network kpi monitoring provided by u2020, in several minutes, we will find that the throughput rate of the monitored cell is rising and reaching the value required by the intent.



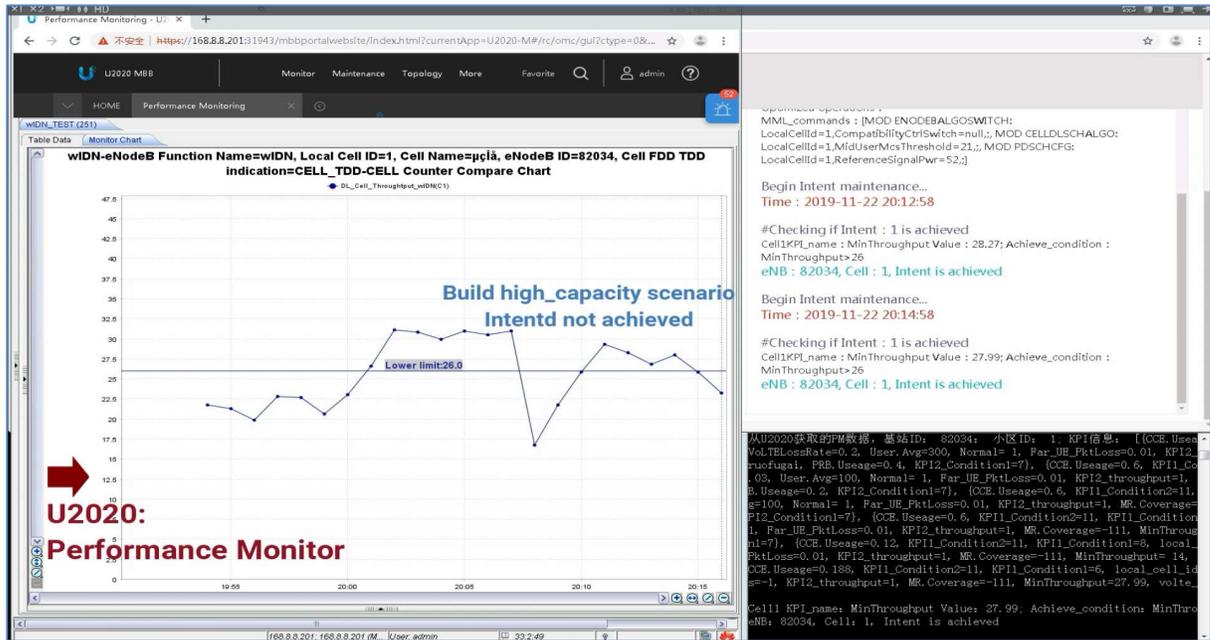
The next is Scenario 2, we will Verify the maintenance function of the intent under weak coverage, first, we build a weak coverage scene, move UE to weak coverage point, After a while, the throughput of the main-test cell is going to drop down through the KPI monitor of EMS, the intent is not satisfied.



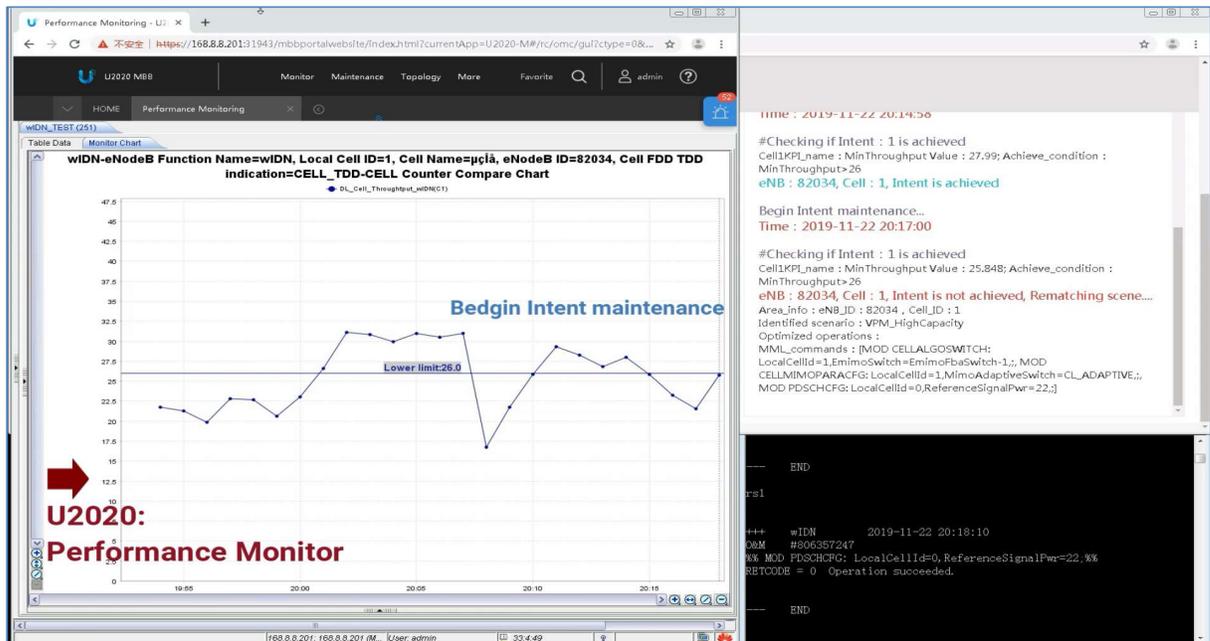
The intent maintenance function of the intent system detects changes and feeds back to the front page, Intent system collects performance data, compares value with the threshold value of weak coverage scene, if matched, intent system will get the particular commands from Intent knowledge repository and execute them to maintain the intent policy



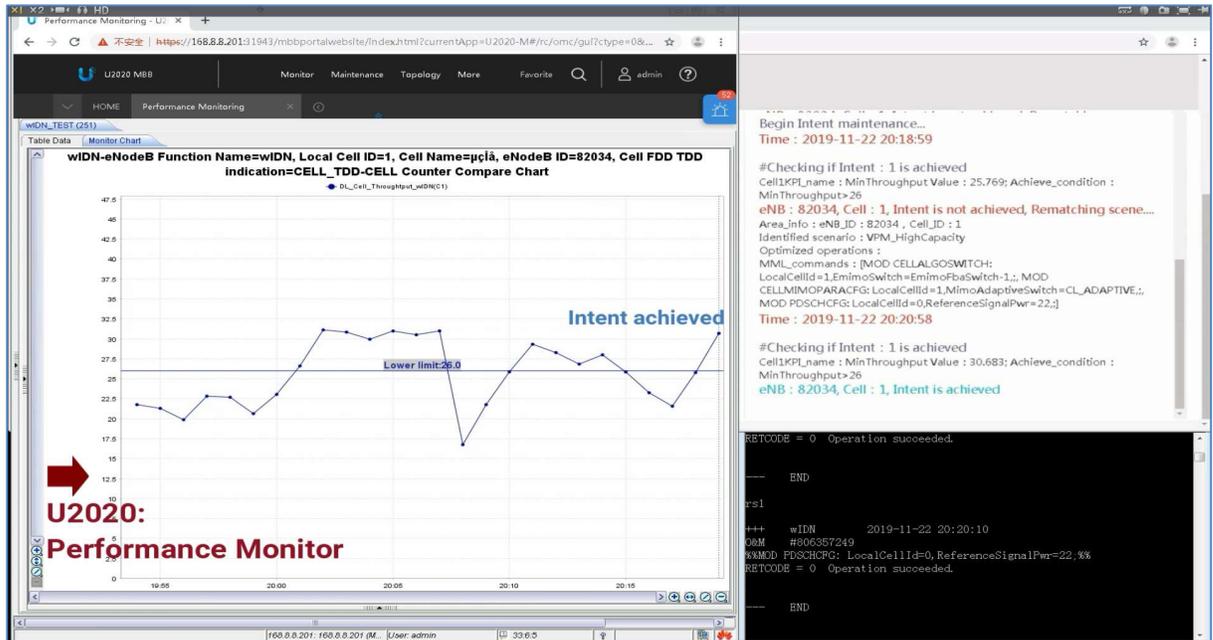
After a few minutes, the intent may be satisfied again.



The next is Scenario 3, we can Verify the maintenance function of the intent under high loading, first, we build a high loading scene, move UE to the high load point, After a while, the throughput of the main-test cell is going to drop down through the KPI monitor of EMS, the intent is not satisfied.



The intent maintenance function of the intent system detects changes and feeds back to the front page, Intent system collects performance data, compares value with the threshold value of high loading scene, if matched, intent system will get the particular commands from Intent database and execute them to maintain the intent policy.



After a few minutes, the intent should be fulfilment again.