

L700 Field Trial Report

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Revision History

Prepared By	Revision Date	Previous Revision Date	Summary of Changes	Changes Marked
	29 March 2023	N/A	First Issue	N/A
	20 April 2023	29 March 2023	Add detail on the trail site setup	N/A

Approvals

Name	Signature	Title	Date of Issue	Version
			31 March 2023	1.0
			21 April 2023	2.0

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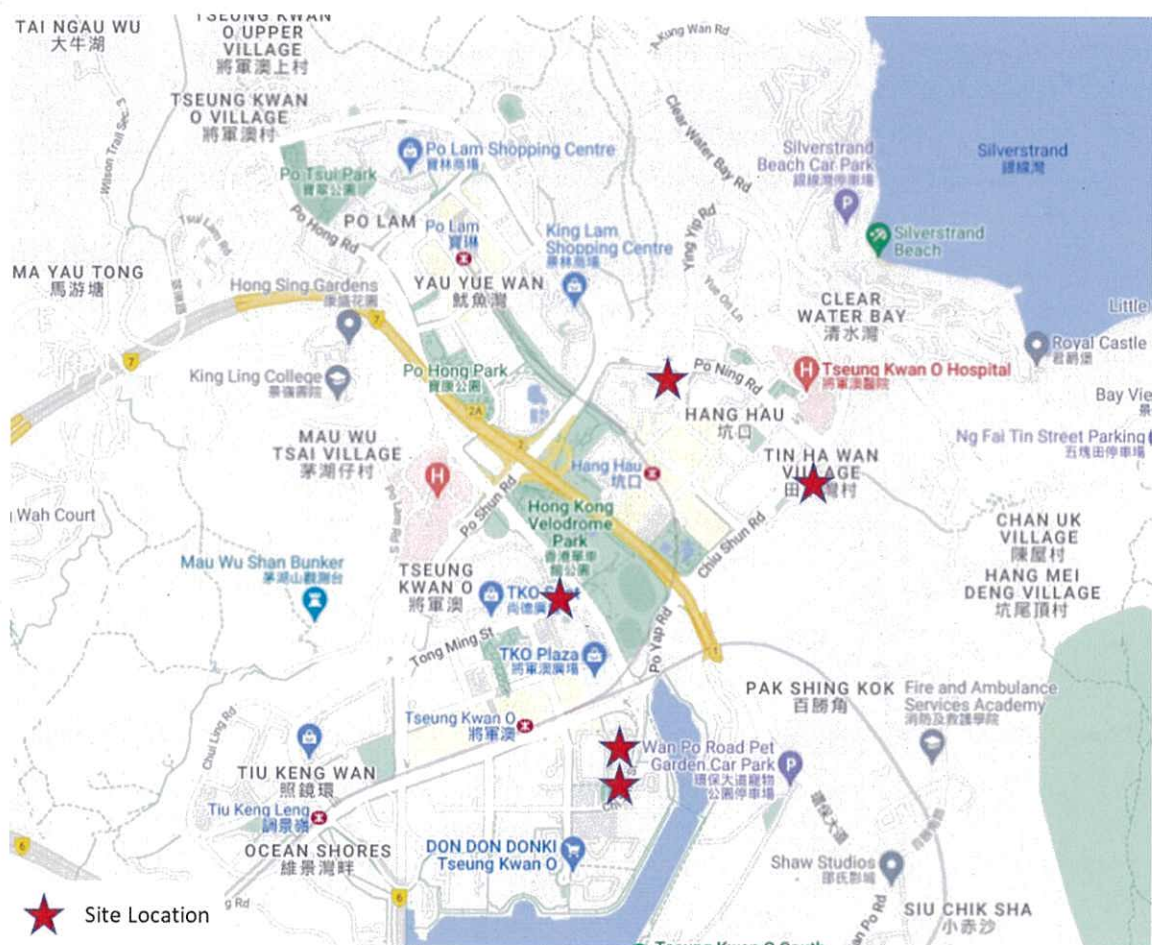
1. Introduction

In support of telecommunications and smart city developments in Hong Kong, the spectrum in the 700 MHz band originally used for television broadcast has been re-assigned for the provision of mobile telecommunications services. Before the commercial deployment, HKT is set up a trial network with 5 sites in Tseung Kwan O area to conduct the basic functionality check and verify the performance of the new 700 MHz network.

2. Trial Set Up

Test Period: 21/June/2022 – 29/June/2022

Trial Site Location



#	HKT Site Code	Site Address
1	SKMTE_002	CSL equipment room on R/F, Ming Toa House, Ming Tak Estate, Tseung Kwan O, NT.
2	SKSTE_002	CSL container on R/F, Sheung Lai House, Sheung Tak Estate, Tseung Kwan O, NT.
3	SKTHH_001	R/F., BLOCK 3, TAK HONG HOUSE, HAU TAK ESTATE, TSEUNG KWAN O, NT.
4	SKYMF_001	R/F, Yee Yan House, Yee Ming Estate, TSEUNG KWAN O, NT.
5	SKPSH_003	R/F, Yee Ching House, Yee Ming Estate, Tseung Kwan O, NT.

Equipment Setup

New Huawei RRU 5512 were installed in all trial site for conducting this trial.



電台細節 Station particulars					
HKT Site Code	設備詳情 Equipment Particulars	頻率及最大頻差容限(兆赫) Frequency and Maximum Frequency Tolerance (MHz)	發射類別 Class of Emission	最大有效輻射 功率 Maximum Effective Radiated Power (dBm)	設備特性 Equipment Characteristics
SKMTE_002	Huawei RRU5512 (3 Set) Antenna Bearing/Downtilt 50°/7°,210°/22°,260°/ 20°,340°/16°	(773-783)Tx (718-728)Rx max frequency tolerance +/- 0.05 pp	10M0G7W	44.8dBm EIRP	3GPP Release 15 TS 38.104
SKSTE_002	Huawei RRU5512 (3 Set) Antenna Bearing/Downtilt 20°/24°,115°/20°,125° /20°,220°/23°,260°/40°	(773-783)Tx (718-728)Rx max frequency tolerance +/- 0.05 pp	10M0G7W	44.8dBm EIRP	3GPP Release 15 TS 38.104
SKTHH_001	Huawei RRU5512 (4 Set) Antenna Bearing/Downtilt 55°/12°,160°/28°,260° /28°,320°/16°	(773-783)Tx (718-728)Rx max frequency tolerance +/- 0.05 pp	10M0G7W	44.8dBm EIRP	3GPP Release 15 TS 38.104
SKYMF_001	Huawei RRU5512 (4 Set) Antenna Bearing/Downtilt 90°/10°,145°/10°,250° /30°,290°/12°	(773-783)Tx (718-728)Rx max frequency tolerance +/- 0.05 pp	10M0G7W	44.8dBm EIRP	3GPP Release 15 TS 38.104
SKPSH_003	Huawei RRU5512 (5 Set) Antenna Bearing/Downtilt 80°/5°,110°/2°,250°/2° 0°,335°/-5°	(773-783)Tx (718-728)Rx max frequency tolerance +/- 0.05 pp	10M0G7W	44.8dBm EIRP	3GPP Release 15 TS 38.104

3. Test Items

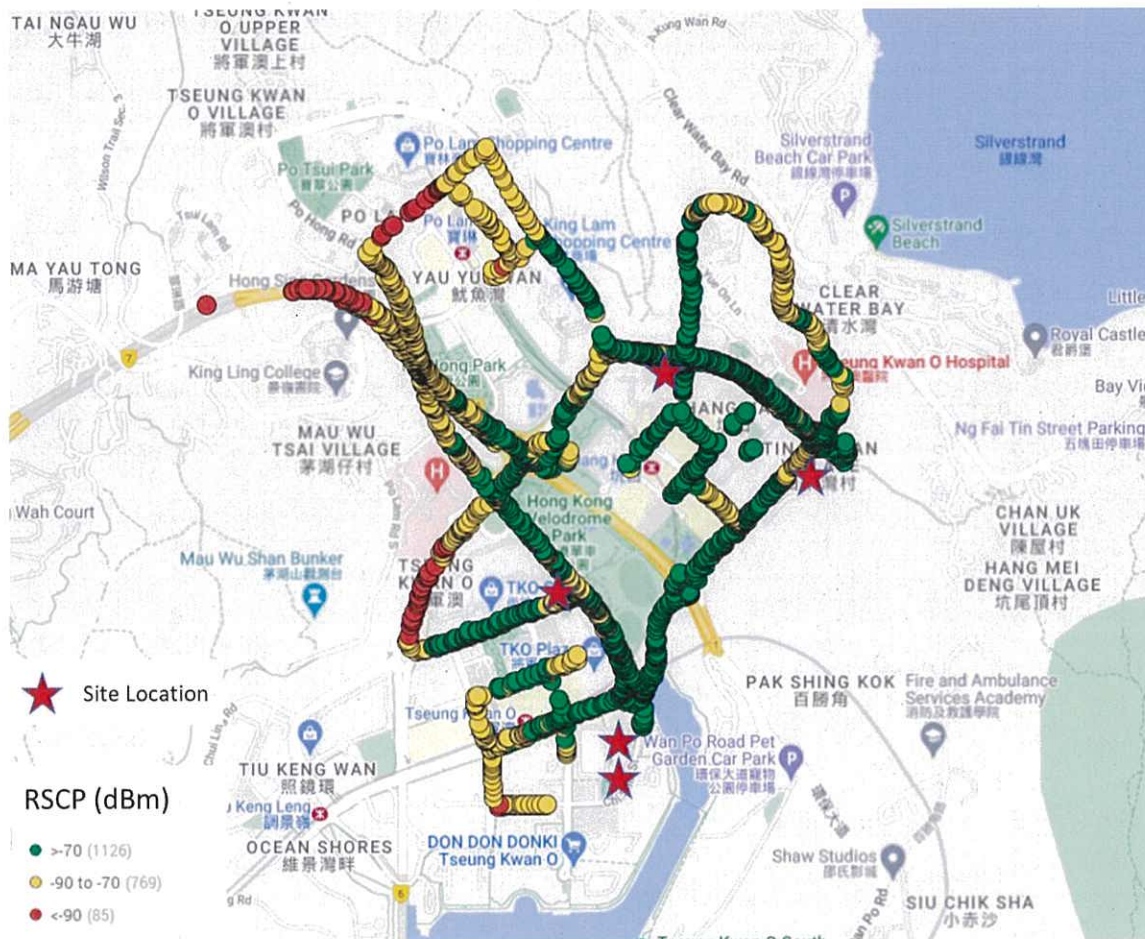
During the trial, the following items were under evaluation.

Item	Description	Details	Expected result
1	Coverage verification	1) Drive test using radio scanner were conduct around TKO area to verify the street level coverage of L700 network	TKO area can be well covered by the trial sites (90% location with RSCP > -90dBm)
2	Basic function check	1) One test location was selected for each trial site 2) 3 voice call and 3 data call were made in each test location	All voice and data call can be set up and terminated successfully
3	KPI monitoring	1) The following KPI were under monitoring during the trial period <ol style="list-style-type: none"> 1. RRC Setup Success Rate (Signaling) 2. E-RAB Setup Success Rate 3. VoLTE Setup Success Rate 4. Service Drop Rate 5. VoLTE Drop Rate 6. Intra-Frequency Handover Out Success Rate 7. Avg RRC User 	All KPI are stable and overall performance are comparable to other co-located cell using difference frequency band

4. Trial Result

4.1. Coverage verification

Drive test was conducted and the strongest RSCP plot for L700 was shown in the figure below.



Result:

Item	Description	Details	Expected result	Actual result
1	Coverage verification	1) Drive test using radio scanner were conducted around TKO area to verify the street level coverage of L700 network	TKO area can be well covered by the trial sites (90% location with RSCP > -90dBm)	General RSCP > -90dBm around TKO area except a small section on Po Shun Road

4.2. Basic function check

The test locations for each trial site were display on the figure below. 3 voice calls and 3 data calls using L700 were made at each location



Loc	Voice	Data
1	Pass	Pass
2	Pass	Pass
3	Pass	Pass
4	Pass	Pass
5	Pass	Pass

Result:

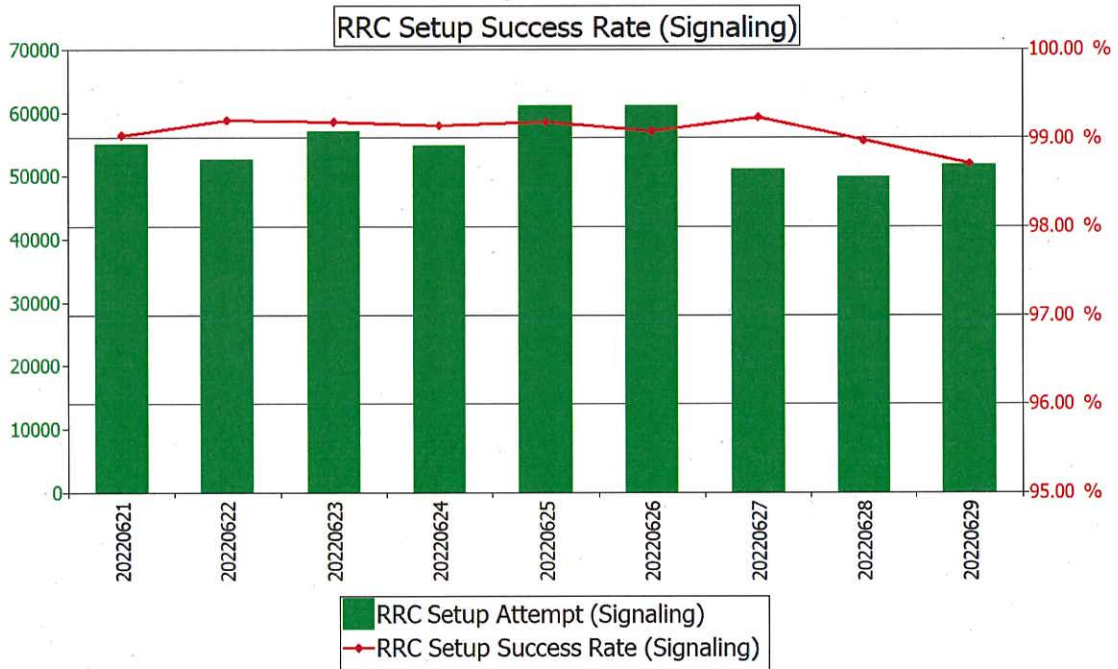
Item	Description	Details	Expected result	Actual result
2	Basic function check	1) One test location was selected for each trial site 2) 3 voice call and 3 data call were made in each test location	All voice and data call can be set up and terminated successfully	As expected

4.3. KPI monitoring

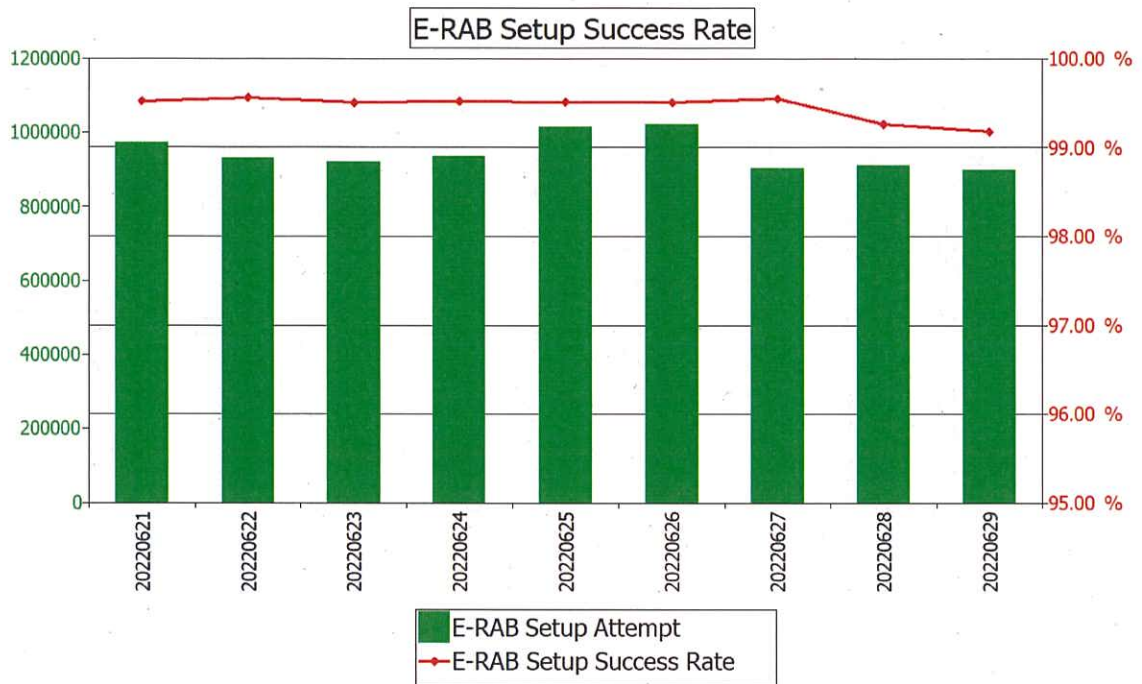
The following KPI of the trial sites were under monitoring during the trial period, and the result of each KPI were show in the figure below:

1. RRC Setup Success Rate (Signaling)
2. E-RAB Setup Success Rate
3. VoLTE Setup Success Rate
4. Service Drop Rate
5. VoLTE Drop Rate
6. Handover Out Success Rate
7. Avg RRC User

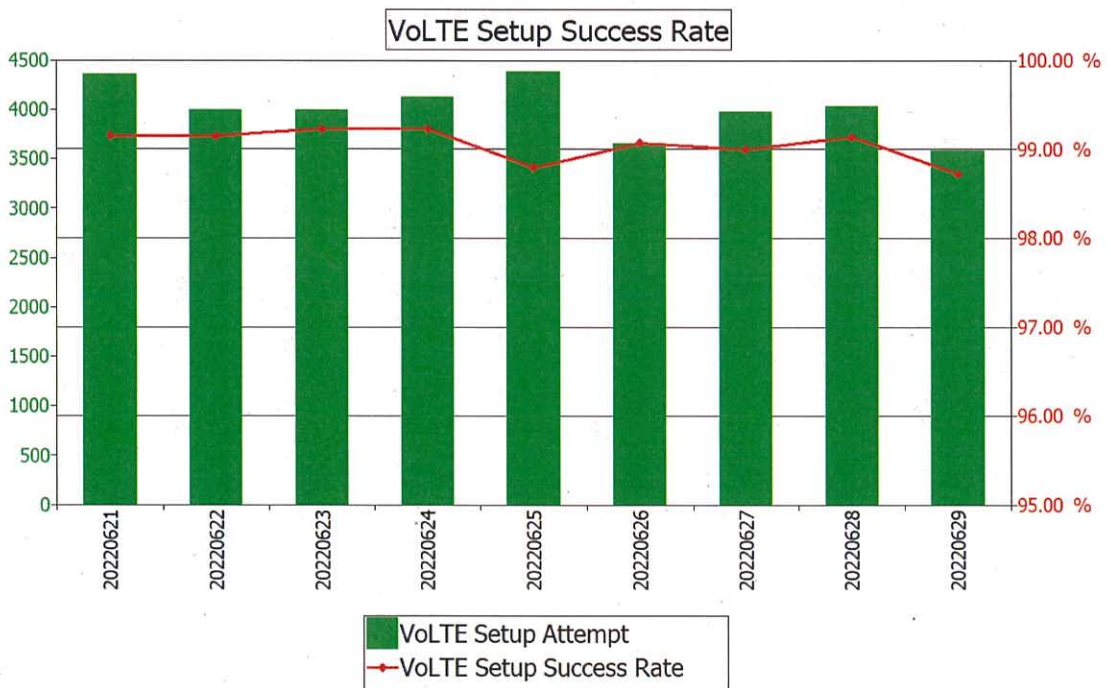
4.3.1. RRC Setup Success Rate (Signaling)



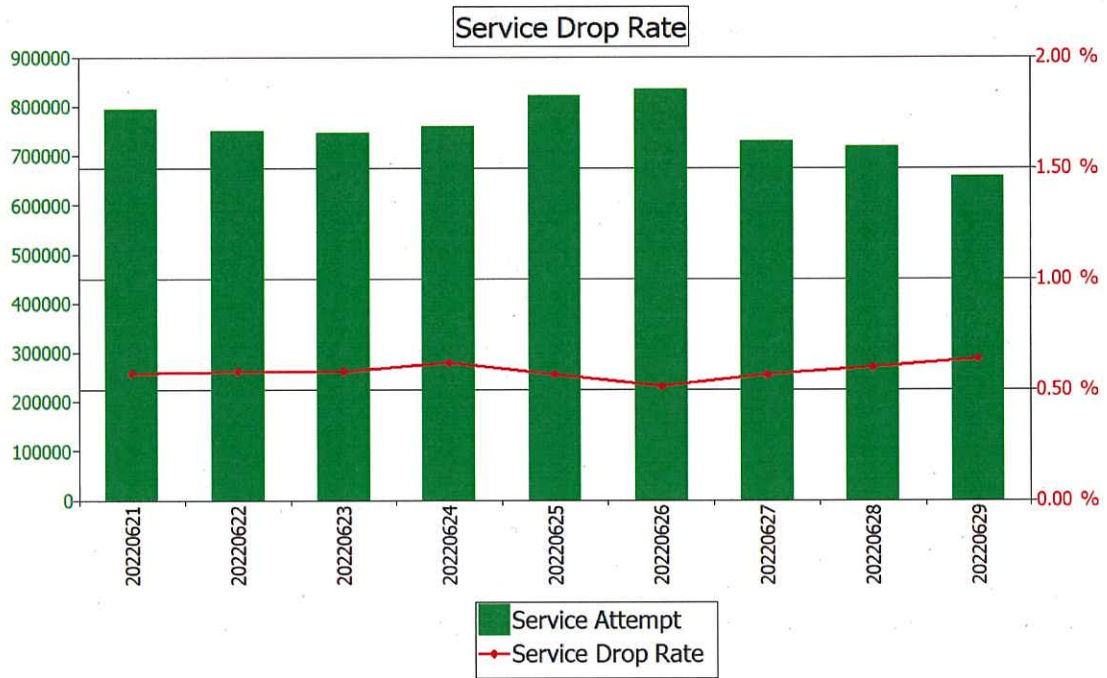
4.3.2. E-RAB Setup Success Rate



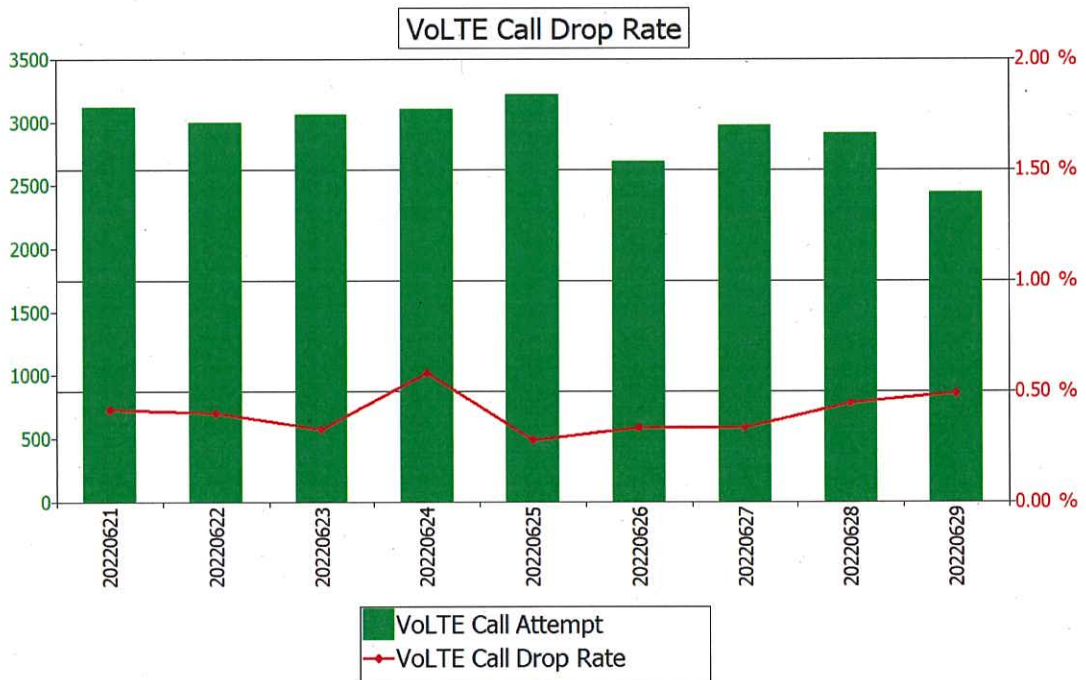
4.3.3. VoLTE Setup Success Rate



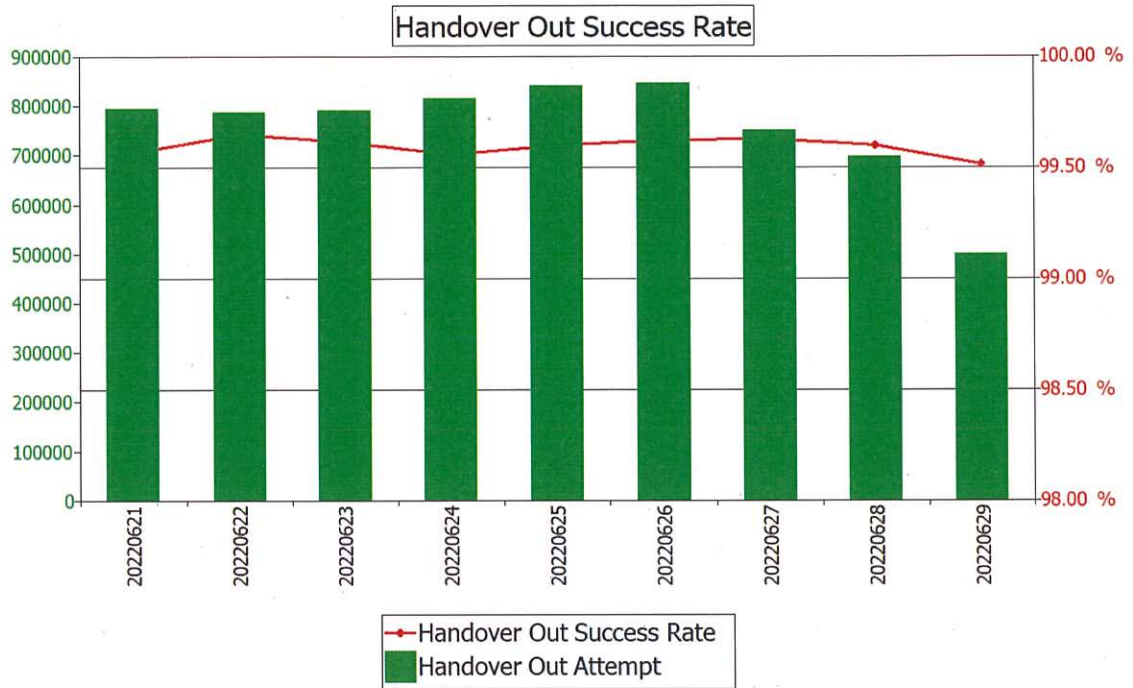
4.3.4. Service Drop Rate



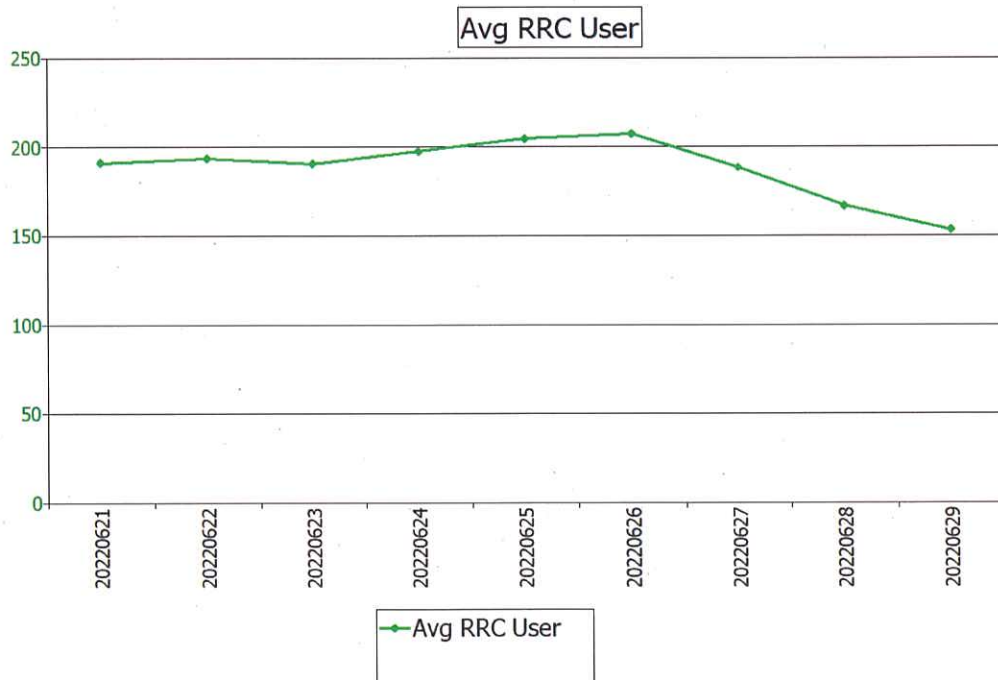
4.3.5. VoLTE Drop Rate



4.3.6. Handover Out Success Rate



4.3.7. Avg RRC User



Result:

Item	Description	Details	Expected result	Actual result
3	KPI monitoring	1) The following KPI were under monitoring during the trial period <ol style="list-style-type: none"> 1. RRC Setup Success Rate (Signaling) 2. E-RAB Setup Success Rate 3. VoLTE Setup Success Rate 4. Service Drop Rate 5. VoLTE Drop Rate 6. Handover Out Success Rate 7. Avg RRC User 	All KPI are stable and overall performance are comparable to other co-located cell using difference frequency band	As expected

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