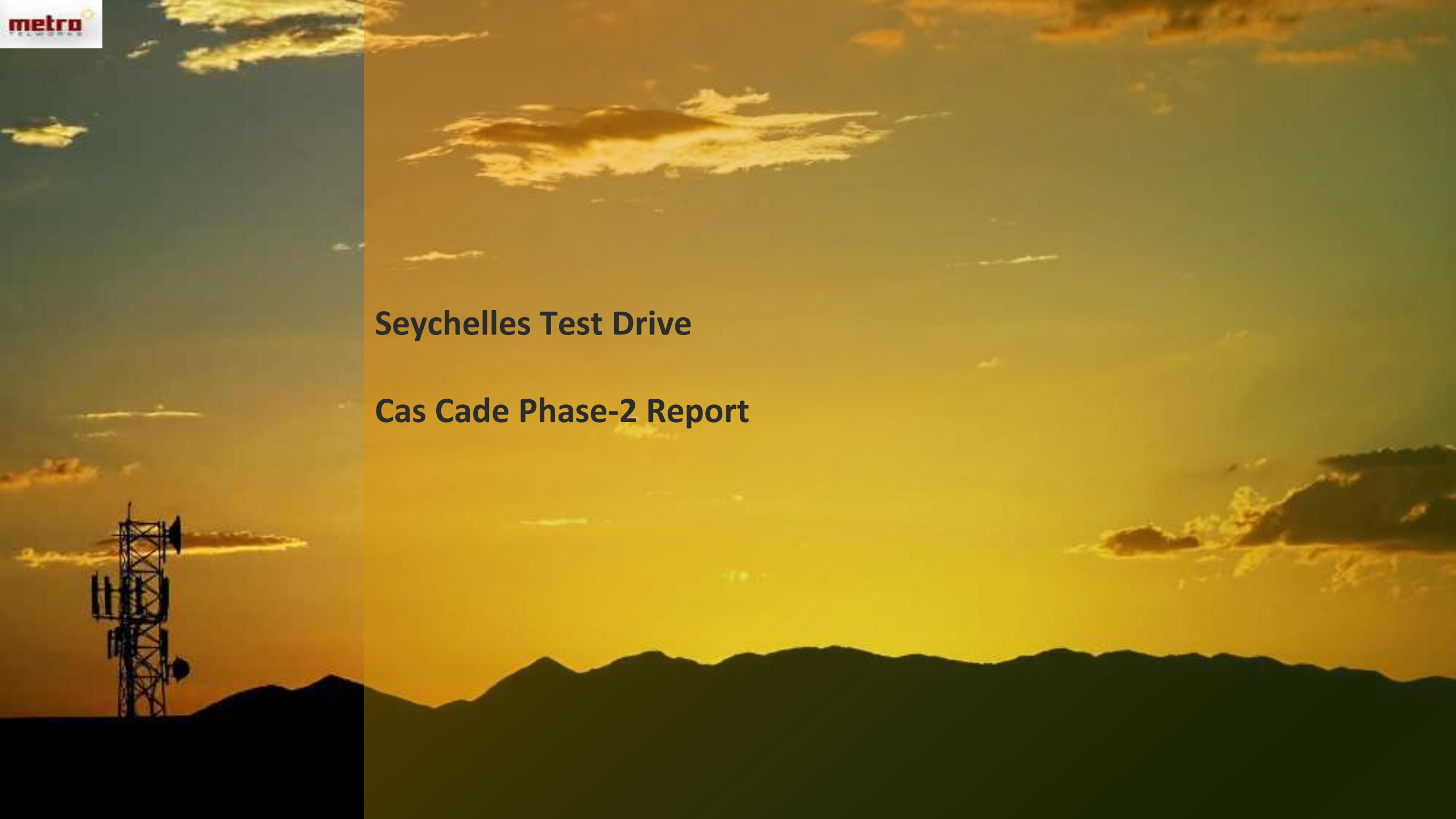


Seychelles Test Drive

Cas Cade Phase-2 Report

DRIVE TEST ROUTE

Phase-1 Dates- 16th Oct 2024

Route Name: Mahe

District Name: Cas cade

Region: East

Island: Mahé

Drive Test Distance: 31.80 kms

Drive Test Duration: 01 hours,44 minutes,39 seconds

Phase-2 Dates- 21st Oct 2024

Route Name: Mahe

District Name: Cas Cade

Region: East

Island: Mahé

Drive Test Distance: 31.61 kms

Drive Test Duration: 01 hours,46 minutes,06 seconds

VOICE EXECUTIVE SUMMARY

Phase-1

Short Call Findings:

- The Call Setup Success Rate for Airtel is (100.00%), while for Operator CWS it is (100.00%).
- The Call Setup Time for Airtel is (5.65s) , while for Operator CWS it is (7.62s)

Long Call Findings :

- The Call Retainability for Airtel is (100.00%), while for CWS it is (100.00%).
- The MOS quality observed for Airtel is (3.13), and for CWS, it is (3.47).

Phase-2

Short Call Findings:

- The Call Setup Success Rate for Airtel is (100.00%), while for Operator CWS it is (99.24%).
- The Call Setup Time for Airtel is (5.97s), while for Operator CWS it is (7.15s)

Long Call Findings :

- The Call Retainability for Airtel is (100.00%), while for CWS it is (100.00%).
- The MOS quality observed for Airtel is (3.15), and for CWS, it is (3.42).

4G PREFERRED DATA TEST – EXECUTIVE SUMMARY

Phase-1

4G Preferred Data Findings:

- Airtel SFTP DL is (13.34 Mbps), while SFTP UL is (6.65 Mbps), CWS SFTP DL is (5.88 Mbps), while SFTP UL is (3.82 Mbps)
- Airtel HTTP DL is (18.08 Mbps), HTTP Capacity DL is (48.26 Mbps) ,HTTP UL is (10.74 Mbps) , and HTTP Capacity UL is (24.06 Mbps).
- CWS HTTP DL is (6.84 Mbps), HTTP Capacity DL is (28.82 Mbps) ,HTTP UL is (8.49 Mbps) , and HTTP Capacity UL is (33.14 Mbps).
- On live web page testing for browsing, www.shein.com took (6.73s), www.nbs.gov.sc took (17.36s), and www.sbc.sc took (20.34s) on Airtel.
- On live web page testing for browsing, www.shein.com took (7.10s), www.nbs.gov.sc took (16.51s), and www.sbc.sc took (17.54s) on CWS.
- On static browsing, Kepler Webpage took (4.59s), and Kepler Mobile took (1.79s) on Airtel.
- On static browsing, Kepler Webpage took (5.34s), and Kepler Mobile took (2.97s) on CWS.
- YouTube average resolution in Airtel is (1080.00) pixels.
- YouTube average resolution in CWS is (1075.58) pixels.
- Airtel scored 63.12% in Carrier Aggregation (CA).
- CWS scored 47.80% in Carrier Aggregation (CA).

Phase-2

4G Preferred Data Findings:

- Airtel SFTP DL is (14.69 Mbps), while SFTP UL is (6.79 Mbps), CWS SFTP DL is (6.92 Mbps), while SFTP UL is (3.36 Mbps)
- Airtel HTTP DL is (20.92 Mbps), HTTP Capacity DL is (52.03 Mbps) ,HTTP UL is (10.90 Mbps) , and HTTP Capacity UL is (22.93 Mbps).
- CWS HTTP DL is (8.93 Mbps), HTTP Capacity DL is (30.81 Mbps) ,HTTP UL is (6.26 Mbps) , and HTTP Capacity UL is (23.61 Mbps).
- On live web page testing for browsing, www.shein.com took (7.80s), www.nbs.gov.sc took (17.55s), and www.sbc.sc took (17.28s) on Airtel.
- On live web page testing for browsing, www.shein.com took (6.61s), www.nbs.gov.sc took (16.51s), and www.sbc.sc took (14.12s) on CWS.
- On static browsing, Kepler Webpage took (4.87s), and Kepler Mobile took (1.94s) on Airtel.
- On static browsing, Kepler Webpage took (4.98s), and Kepler Mobile took (2.83s) on CWS.
- YouTube average resolution in Airtel is (1080.00) pixels.
- YouTube average resolution in CWS is (1080.00) pixels.
- Airtel scored 66.62% in Carrier Aggregation (CA).
- CWS scored 50.40% in Carrier Aggregation (CA).

3G PREFERRED DATA TEST - EXECUTIVE SUMMARY

Phase-1

3G Preferred Data Test Findings:

- Airtel SFTP DL is (4.54 Mbps), while SFTP UL is (1.54 Mbps), CWS SFTP DL is (3.23 Mbps), while SFTP UL is (1.14 Mbps)
- Airtel HTTP DL is (4.59 Mbps), HTTP Capacity DL is (6.81 Mbps) ,HTTP UL is (2.18 Mbps) , and HTTP Capacity UL is (4.69 Mbps).
- CWS HTTP DL is (3.29 Mbps), HTTP Capacity DL is (9.29 Mbps) ,HTTP UL is (1.78 Mbps) , and HTTP Capacity UL is (4.29 Mbps).
- On live web page testing for browsing, www.shein.com took (8.45s), www.nbs.gov.sc took (10.64s), and www.sbc.sc took (16.79s) on Airtel.
- On live web page testing for browsing, www.shein.com took (9.64s), www.nbs.gov.sc took (11.35s), and www.sbc.sc took (16.12s) on CWS.
- On static browsing, Kepler Webpage took (3.82s), and Kepler Mobile took (1.70s) on Airtel.
- On static browsing, Kepler Webpage took (8.11s), and Kepler Mobile took (3.83s) on CWS.
- YouTube average resolution in Airtel is (1023.54) pixels.
- YouTube average resolution in CWS is (989.17) pixels.

Phase-2

3G Preferred Data Test Findings:

- Airtel SFTP DL is (5.02 Mbps), while SFTP UL is (1.75 Mbps), CWS SFTP DL is (3.47 Mbps), while SFTP UL is (1.11 Mbps)
- Airtel HTTP DL is (5.10 Mbps), HTTP Capacity DL is (6.79 Mbps) ,HTTP UL is (2.52 Mbps) , and HTTP Capacity UL is (4.97 Mbps).
- CWS HTTP DL is (3.12 Mbps), HTTP Capacity DL is (7.75 Mbps) ,HTTP UL is (1.99 Mbps) , and HTTP Capacity UL is (4.60 Mbps).
- On live web page testing for browsing, www.shein.com took (9.50s), www.nbs.gov.sc took (11.04s), and www.sbc.sc took (12.21s) on Airtel.
- On live web page testing for browsing, www.shein.com took (13.13s), www.nbs.gov.sc took (9.93s), and www.sbc.sc took (13.19s) on CWS.
- On static browsing, Kepler Webpage took (3.31s), and Kepler Mobile took (1.77s) on Airtel.
- On static browsing, Kepler Webpage took (5.14s), and Kepler Mobile took (2.44s) on CWS.
- YouTube average resolution in Airtel is (1057.46) pixels.
- YouTube average resolution in CWS is (1080.00) pixels.

TESTING METHODOLOGY

Short Call	
Call Duration	10 Seconds
Setup and Release phase	30 seconds
Minimum pause between calls	30 seconds

Long Call	
Call Duration	120 Seconds
Setup and Release phase	30 seconds
Minimum between calls	30 seconds

DATA	Test Type and Timeout	Technology 3G Preferred	Technology 4G Preferred
POP always on. ICMP PAYLOAD PING 800 BYTES			
1	FILE TRANSFER DOWNLOAD	FTP DL (3MB)	FTP DL (5MB)
	135s	wait 10s	wait 10s
2	FILE TRANSFER UPLOAD	FTP UL (1MB)	FTP UL (3MB)
	135s	wait 10s	wait 10s
3	FILE TRANSFER DOWNLOAD	HTTP Get (3MB)	HTTP Get (5MB)
	135s	wait 10s	wait 10s
4	FILE TRANSFER UPLOAD	HTTP Put (1MB)	HTTP Put (3MB)
	135s	wait 10s	wait 10s
5	ICMP PING 32 BYTES	Ping (32 bytes) *5	Ping (32 bytes) *5
		wait 10s	wait 10s
6	YOUTUBE STREAMING	Video: YouTube 60sec	Video: YouTube 60sec
	95 seconds	wait 10s	wait 10s
7	KEPLER WEB BROWSING	HTTPS Browsing: Kepler	HTTPS Browsing: Kepler
	45s	wait 10s	wait 10s
8	LIVE WEB BROWSING	www.shein.com, www.nbs.gov.sc, www.sbc.sc	www.shein.com, www.nbs.gov.sc, www.sbc.sc
	45s	wait 10s	wait 10s
9	KEPLER MOBILE WEB BROWSING	HTTPS Browsing: Kepler Mobile	HTTPS Browsing: Kepler Mobile
	45s	wait 10s	wait 10s
10	ICMP PING 32 BYTES	Ping (32 bytes) 5 www.google.com	Ping (32 bytes) 5 www.google.com
		wait 10s	wait 10s
11	FILE TRANSFER-CAPACITY DOWNLOAD	HTTP Get (500MB) Multiple files	HTTP Get (500MB) Multiple files
	10s fixed duration	wait 10s	wait 10s
12	FILE TRANSFER-CAPACITY UPLOAD	HTTP Put (500MB)-Multiple Files	HTTP Put (500MB)-Multiple Files
	10s fixed duration	wait 10s	wait 10s

VOICE TEST KPI STATISTICS (Short Call)

Phase-1

Short Call Statistics		
Short Call Scenario	Operator 1	Operator 2
Voice KPIs	Airtel	CWS
Call Attempt	137	129
Call Failed	0	0
Call Connected	137	129
CSSR[%]	100.00	100.00
USCSR[%]	0.00	0.00
CST [s] Alerting	5.65	7.62
CST [s]Connected	5.91	7.81

CSSR= Call Setup Success rate
USCSR=Unsuccessful call setup ratio
CST=Call setup time
Call Setup Success Ratio >97%
CRR= Call retainability ratio
DCR=Dropped-call rate
MOS=Mean Opinion Score
Drop Call Ratio<2

Call Setup Time (s)	Operators		Rank	
	Airtel	CWS	Airtel	CWS
Overall CST (until ringing/alerting)	5.65	7.62	1	2
CS calls CST (until ringing/alerting)	5.10	10.22	1	2
CSFB calls CST (until ringing/alerting)	5.72	7.60	1	2
Overall CST (until Connect/Connect Acknowledge)	5.91	7.81	1	2
CS calls CST (until Connect/Connect Acknowledge)	5.35	10.38	1	2
CSFB calls CST (until Connect/Connect Acknowledge)	5.97	7.79	1	2

Phase-2

Short Call Statistics		
Short Call Scenario	Operator 1	Operator 2
Voice KPIs	Airtel	CWS
Call Attempt	136	131
Call Failed	0	1
Call Connected	136	130
CSSR[%]	100.00	99.24
USCSR	0.00	0.76
CST [s] Alerting	5.97	7.15
CST [s]Connected	6.26	7.33

Call Setup Time (s)	Operators		Rank	
	Airtel	CWS	Airtel	CWS
Overall CST (until ringing/alerting)	5.97	7.15	1	2
CS calls CST (until ringing/alerting)	6.17	6.61	1	2
CSFB calls CST (until ringing/alerting)	5.95	7.23	1	2
Overall CST (until Connect/Connect Acknowledge)	6.26	7.33	1	2
CS calls CST (until Connect/Connect Acknowledge)	6.48	6.75	1	2
CSFB calls CST (until Connect/Connect Acknowledge)	6.23	7.41	1	2

VOICE TEST KPI STATISTICS (Long Call)

Phase-1

Long Call Statistics		
Long Call Scenario	Operator 1	Operator 2
Voice KPIs	Airtel	CWS
Call Connected	35	34
Call Dropped	0	0
Call Completed	35	34
CRR[%]	100.00	100.00
DCR[%]	0.00	0.00
MOS	3.13	3.47

	Airtel short call	CWS short call	Airtel long call	CWS long call
CSFB Calls	123	129	33	34
CS Calls	14	0	2	0

Handover Statistics	Airtel MO	CWS MO
Handover Attempt	21	76
Handover Failure	1	0
Handover Success	20	76
HOSR %	95.24	100.00

Phase-2

Long Call Statistics		
Long Call Scenario	Operator 1	Operator 2
Voice KPIs	Airtel	CWS
Call Connected	37	34
Call Dropped	0	0
Call Completed	37	34
CRR[%]	100.00	100.00
DCR[%]	0.00	0.00
MOS	3.15	3.42

	Airtel short call	CWS short call	Airtel long call	CWS long call
CSFB Calls	120	114	34	22
CS Calls	16	17	3	12

Handover Statistics	Airtel MO	CWS MO
Handover Attempt	20	48
Handover Failure	0	1
Handover Success	20	47
HOSR %	100.00	97.92

DATA TEST KPI STATISTICS(4G Preferred)

DATA Scenario		Phase-1				Phase-2			
		Airtel 4G	CWS 4G	Airtel 4G (Rank)	CWS 4G (Rank)	Airtel 4G	CWS 4G	Airtel 4G (Rank)	CWS 4G (Rank)
FILE TRANSFER	SFTP DL (Mbps)	13.34	5.88	1	2	14.69	6.92	1	2
	SFTP UL(Mbps)	6.65	3.82	1	2	6.79	3.36	1	2
	HTTP DL(Mbps)	18.08	6.84	1	2	20.92	8.93	1	2
	HTTP UL(Mbps)	10.74	8.49	1	2	10.90	6.26	1	2
	HTTP Capacity DL(Mbps)	48.26	28.82	1	2	52.03	30.81	1	2
	HTTP Capacity UL(Mbps)	24.06	33.14	2	1	22.93	23.61	2	1
BROWSER	Overall Browser DL Time (s)	10.26	9.83	2	1	9.94	9.03	2	1
	Kepler Webpage DL Time (s)	4.59	5.34	1	2	4.87	4.98	1	2
	Mobile Kepler Webpage DL Time (s)	1.79	2.97	1	2	1.94	2.83	1	2
	www.shein.com Webpage DL Time (s)	6.73	7.10	1	2	7.80	6.61	2	1
	www.nbs.gov.sc Webpage DL Time (s)	17.36	16.51	2	1	17.55	16.51	2	1
	www.sbc.sc Webpage DL Time (s)	20.34	17.54	2	1	17.28	14.12	2	1
LATENCY	Avg Latency (ms)	266.68	332.94	1	2	256.38	277.85	1	2
	Median Latency (ms)	245	341	1	2	132	217	1	2
YOUTUBE	YouTube Access Time (s)	5.23	2.02	2	1	5.11	1.64	2	1
	YouTube Average Resolution (pixels)	1080.00	1075.58	1	2	1080.00	1080.00	1	1
	YouTube Success Ratio [%]	100.00	100.00	1	1	100.00	100.00	1	1

4G PREFERRED THROUGHPUT FILE ACCESS

Phase-1

Test Type	Status	Airtel 4G	CWS 4G	Airtel 4G (%)	CWS 4G (%)
SFTP DL	Success	22	20	100.00	100.00
	Failure	0	0	0.00	0.00
SFTP UL	Success	21	20	95.45	100.00
	Failure	1	0	4.55	0.00
HTTP DL	Success	20	20	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP UL	Success	22	20	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP Capacity DL	Success	21	18	95.45	100.00
	Failure	1	0	4.55	0.00
HTTP Capacity UL	Success	20	17	100.00	94.44
	Failure	0	1	0.00	5.56

Phase-2

Test Type	Status	Airtel 4G	CWS 4G	Airtel 4G (%)	CWS 4G (%)
SFTP DL	Success	23	22	100.00	100.00
	Failure	0	0	0.00	0.00
SFTP UL	Success	23	22	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP DL	Success	23	21	100.00	95.45
	Failure	0	1	0.00	4.55
HTTP UL	Success	23	21	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP Capacity DL	Success	19	19	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP Capacity UL	Success	19	18	100.00	100.00
	Failure	0	0	0.00	0.00

4G PREFERRED BROWSING FILE ACCESS

Phase-1

Web Page	Status	Airtel 4G	CWS 4G	Airtel 4G (%)	CWS 4G (%)
Kepler	Success	19	20	95.00	100.00
	Failure	1	0	5.00	0.00
Mobile Kepler	Success	19	18	95.00	100.00
	Failure	1	0	5.00	0.00
www.shein.com	Success	20	19	100.00	100.00
	Failure	0	0	0.00	0.00
www.nbs.gov.sc	Success	20	19	100.00	100.00
	Failure	0	0	0.00	0.00
www.sbc.sc	Success	20	18	100.00	94.74
	Failure	0	1	0.00	5.26

Phase-2

Web Page	Status	Airtel 4G	CWS 4G	Airtel 4G (%)	CWS 4G (%)
Kepler	Success	20	20	95.24	100.00
	Failure	1	0	4.76	0.00
Mobile Kepler	Success	20	18	100.00	94.74
	Failure	0	1	0.00	5.26
www.shein.com	Success	21	19	100.00	95.00
	Failure	0	1	0.00	5.00
www.nbs.gov.sc	Success	21	19	100.00	100.00
	Failure	0	0	0.00	0.00
www.sbc.sc	Success	20	19	95.24	100.00
	Failure	1	0	4.76	0.00

4G PREFERRED LATENCY

Phase-1

	Latency KPIs	Airtel 4G	CWS 4G
Overall Latency	Sample Count [32 bytes]	40	37
	Average Latency [ms]	262.33	340.95
	Median Latency [ms]	231	382
	Ping session status: Successful	40	37
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	1	1
	Packet Loss<1%	2.44	2.63
www.google.com	Average Latency [ms]	403.89	257.72
	Median Latency [ms]	400	168
	Ping session status: Successful	19	18
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00
102.133.176.104	Average Latency [ms]	134.24	419.79
	Median Latency [ms]	121	422
	Ping session status: Successful	21	19
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	1	1
	Packet Loss<1%	4.55	5.00

Phase-2

	Latency KPIs	Airtel 4G	CWS 4G
Overall Latency	Sample Count [32 bytes]	43	40
	Average Latency [ms]	253.00	261.85
	Median Latency [ms]	134	204
	Ping session status: Successful	43	40
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00
www.google.com	Average Latency [ms]	403.10	232.47
	Median Latency [ms]	397	161
	Ping session status: Successful	20	19
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00
102.133.176.104	Average Latency [ms]	122.48	288.43
	Median Latency [ms]	121	232
	Ping session status: Successful	23	21
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00

4G PREFERRED YOUTUBE COMPARISON

Phase-1

LTE YOUTUBE Success Ratio		
KPIs	Airtel 4G	CWS 4G
Attempt(Count)	22	20
Success(Count)	22	20
Failure(Count)	0	0
YouTube Access Time (s)	5.23	2.02
YouTube Average Resolution (pixels)	1080.00	1075.58
YouTube Success Ratio [%]	100.00	100.00

Phase-2

LTE YOUTUBE Success Ratio		
KPIs	Airtel 4G	CWS 4G
Attempt(Count)	23	21
Success(Count)	23	21
Failure(Count)	0	0
YouTube Access Time (s)	5.11	1.64
YouTube Average Resolution (pixels)	1080.00	1080.00
YouTube Success Ratio [%]	100.00	100.00

DATA TEST KPI STATISTICS (3G Preferred)

DATA Scenario		Phase-1				Phase-2			
		Airtel 3G	CWS 3G	Airtel 3G (Rank)	CWS 3G (Rank)	Airtel 3G	CWS 3G	Airtel 3G (Rank)	CWS 3G (Rank)
FILE TRANSFER	SFTP DL (Mbps)	4.54	3.23	1	2	5.02	3.47	1	2
	SFTP UL(Mbps)	1.54	1.14	1	2	1.75	1.11	1	2
	HTTP DL(Mbps)	4.59	3.29	1	2	5.10	3.12	1	2
	HTTP UL(Mbps)	2.18	1.78	1	2	2.52	1.99	1	2
	HTTP Capacity DL(Mbps)	6.81	9.29	2	1	6.79	7.75	2	1
	HTTP Capacity UL(Mbps)	4.69	4.29	1	2	4.97	4.60	1	2
BROWSER	Overall Browser DL Time (s)	8.10	9.59	1	2	7.58	9.05	1	2
	Kepler Webpage DL Time (s)	3.82	8.11	1	2	3.31	5.14	1	2
	Mobile Kepler Webpage DL Time (s)	1.70	3.83	1	2	1.77	2.44	1	2
	www.shein.com Webpage DL Time (s)	8.45	9.64	1	2	9.50	13.13	1	2
	www.nbs.gov.sc Webpage DL Time (s)	10.64	11.35	1	2	11.04	9.93	2	1
	www.sbc.sc Webpage DL Time (s)	16.79	16.12	2	1	12.21	13.19	1	2
LATENCY	Avg Latency (ms)	290.98	191.75	2	1	260.18	210.73	2	1
	Median Latency (ms)	397	196	2	1	150	178	1	2
YOUTUBE	YouTube Access Time (s)	3.95	1.95	2	1	3.61	1.69	2	1
	YouTube Average Resolution (pixels)	1023.54	989.17	1	2	1057.46	1080.00	2	1
	YouTube Success Ratio [%]	94.44	93.75	1	2	100.00	28.57	1	2

3G PREFERRED THROUGHPUT FILE ACCESS

Phase-1

Test Type	Status	Airtel 3G	CWS 3G	Airtel 3G (%)	CWS 3G (%)
SFTP DL	Success	17	10	100.00	100.00
	Failure	0	0	0.00	0.00
SFTP UL	Success	18	12	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP DL	Success	17	13	94.44	92.86
	Failure	1	1	5.56	7.14
HTTP UL	Success	18	12	100.00	75.00
	Failure	0	4	0.00	25.00
HTTP Capacity DL	Success	16	15	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP Capacity UL	Success	16	10	100.00	71.43
	Failure	0	4	0.00	28.57

Phase-2

Test Type	Status	Airtel 3G	CWS 3G	Airtel 3G (%)	CWS 3G (%)
SFTP DL	Success	20	9	100.00	100.00
	Failure	0	0	0.00	0.00
SFTP UL	Success	19	8	95.00	88.89
	Failure	1	1	5.00	11.11
HTTP DL	Success	18	8	94.74	88.89
	Failure	1	1	5.26	11.11
HTTP UL	Success	20	6	100.00	35.29
	Failure	0	11	0.00	64.71
HTTP Capacity DL	Success	16	7	100.00	100.00
	Failure	0	0	0.00	0.00
HTTP Capacity UL	Success	16	7	100.00	41.18
	Failure	0	10	0.00	58.82

3G PREFERRED BROWSING FILE ACCESS

Phase-1

Web Page	Status	Airtel 3G	CWS 3G	Airtel 3G(%)	CWS 3G (%)
Kepler	Success	18	16	100.00	100.00
	Failure	0	0	0.00	0.00
Mobile Kepler	Success	16	15	100.00	100.00
	Failure	0	0	0.00	0.00
www.shein.com	Success	18	14	100.00	87.50
	Failure	0	2	0.00	12.50
www.nbs.gov.sc	Success	17	14	100.00	87.50
	Failure	0	2	0.00	12.50
www.sbc.sc	Success	15	13	93.75	92.86
	Failure	1	1	6.25	7.14

Phase-2

Web Page	Status	Airtel 3G	CWS 3G	Airtel 3G(%)	CWS 3G (%)
Kepler	Success	18	5	100.00	71.43
	Failure	0	2	0.00	28.57
Mobile Kepler	Success	16	8	94.12	100.00
	Failure	1	0	5.88	0.00
www.shein.com	Success	17	7	100.00	87.50
	Failure	0	1	0.00	12.50
www.nbs.gov.sc	Success	17	8	94.44	100.00
	Failure	1	0	5.56	0.00
www.sbc.sc	Success	17	9	100.00	100.00
	Failure	0	0	0.00	0.00

3G PREFERRED LATENCY

Phase-1

	Latency KPIs	Airtel 3G	CWS 3G
Overall Latency	Sample Count [32 bytes]	24	30
	Average Latency [ms]	404.50	195.47
	Median Latency [ms]	413	197
	Ping session status: Successful	24	30
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	10	0
	Packet Loss<1%	29.41	0.00
www.google.com	Average Latency [ms]	418.25	146.29
	Median Latency [ms]	418	146
	Ping session status: Successful	16	14
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00
102.133.176.104	Average Latency [ms]	377.00	238.50
	Median Latency [ms]	247	219
	Ping session status: Successful	8	16
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	10	0
	Packet Loss<1%	55.56	0.00

Phase-2

	Latency KPIs	Airtel 3G	CWS 3G
Overall Latency	Sample Count [32 bytes]	34	14
	Average Latency [ms]	276.65	178.14
	Median Latency [ms]	348	159
	Ping session status: Successful	34	14
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	1	0
	Packet Loss<1%	2.86	0.00
www.google.com	Average Latency [ms]	404.06	147.88
	Median Latency [ms]	402	147
	Ping session status: Successful	16	8
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	0	0
	Packet Loss<1%	0.00	0.00
102.133.176.104	Average Latency [ms]	163.39	218.50
	Median Latency [ms]	119	200
	Ping session status: Successful	18	6
	Ping session status: Failed [Socket error]	0	0
	Ping session status: Failed [Protocol error timeout]	1	0
	Packet Loss<1%	5.26	0.00

3G PREFERRED YOUTUBE COMPARISON

Phase-1

UMTS YOUTUBE Success Ratio		
KPIs	Airtel 3G	CWS 3G
Attempt(Count)	18	16
Success(Count)	17	15
Failure(Count)	1	1
YouTube Access Time (s)	3.95	1.95
YouTube Average Resolution (pixels)	1023.54	989.17
YouTube Success Ratio [%]	94.44	93.75

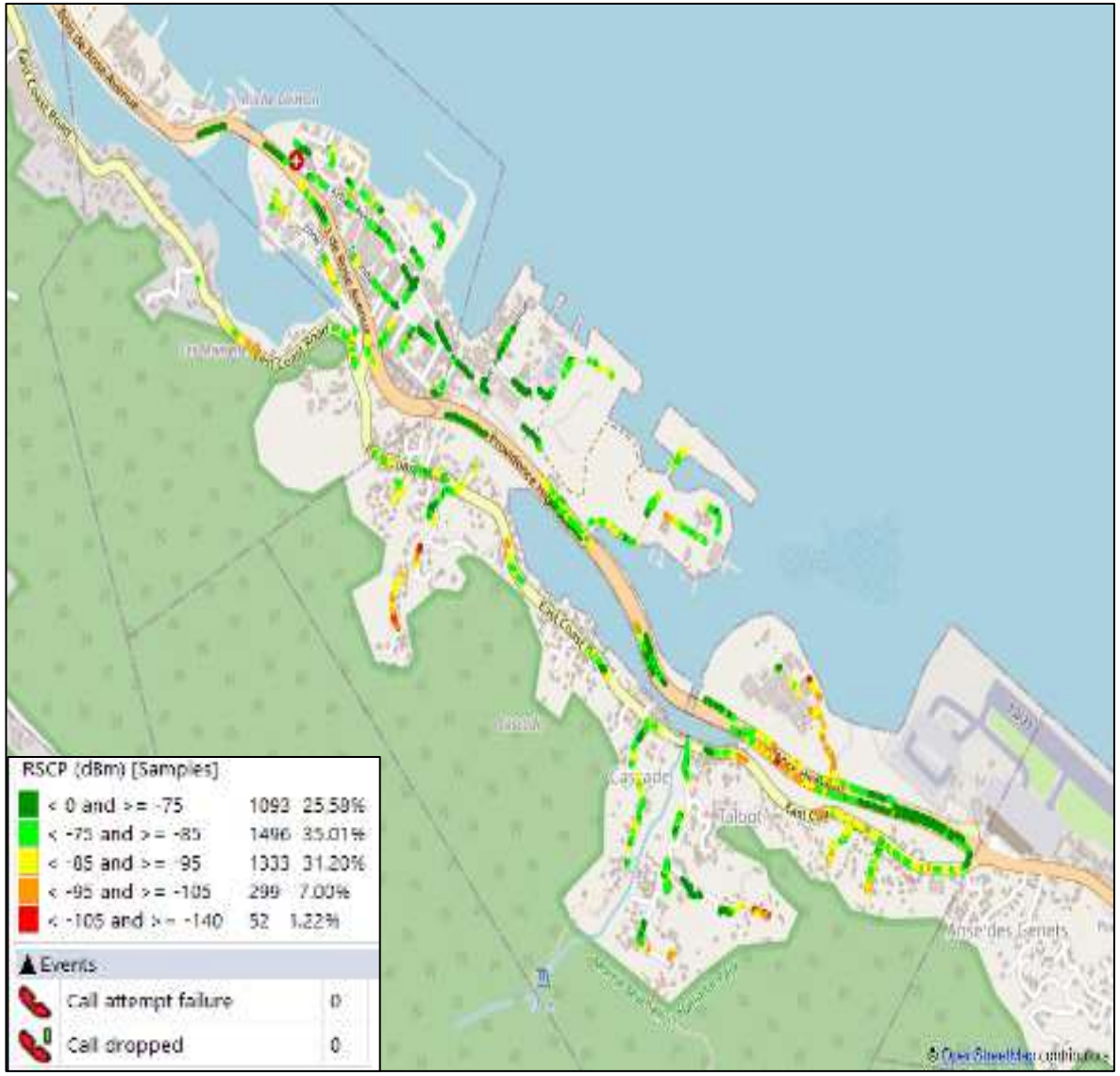
Phase-2

UMTS YOUTUBE Success Ratio		
KPIs	Airtel 3G	CWS 3G
Attempt(Count)	20	21
Success(Count)	20	6
Failure(Count)	0	15
YouTube Access Time (s)	3.61	1.69
YouTube Average Resolution (pixels)	1057.46	1080.00
YouTube Success Ratio [%]	100.00	28.57

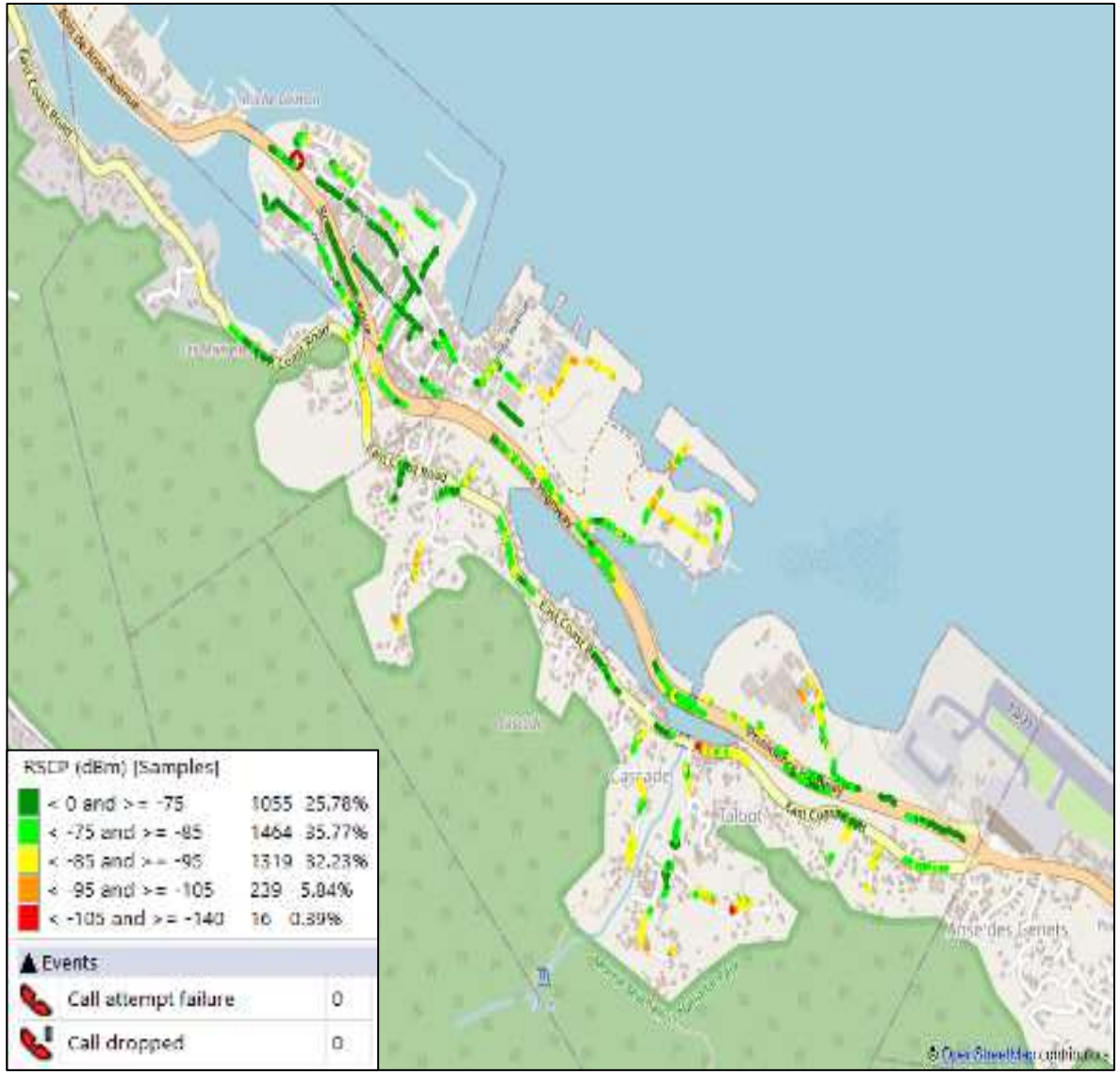
Voice Call Events

Phase-1 SHORT CALL FAILURE EVENTS LOCATION vs RSCP

Airtel SC MO

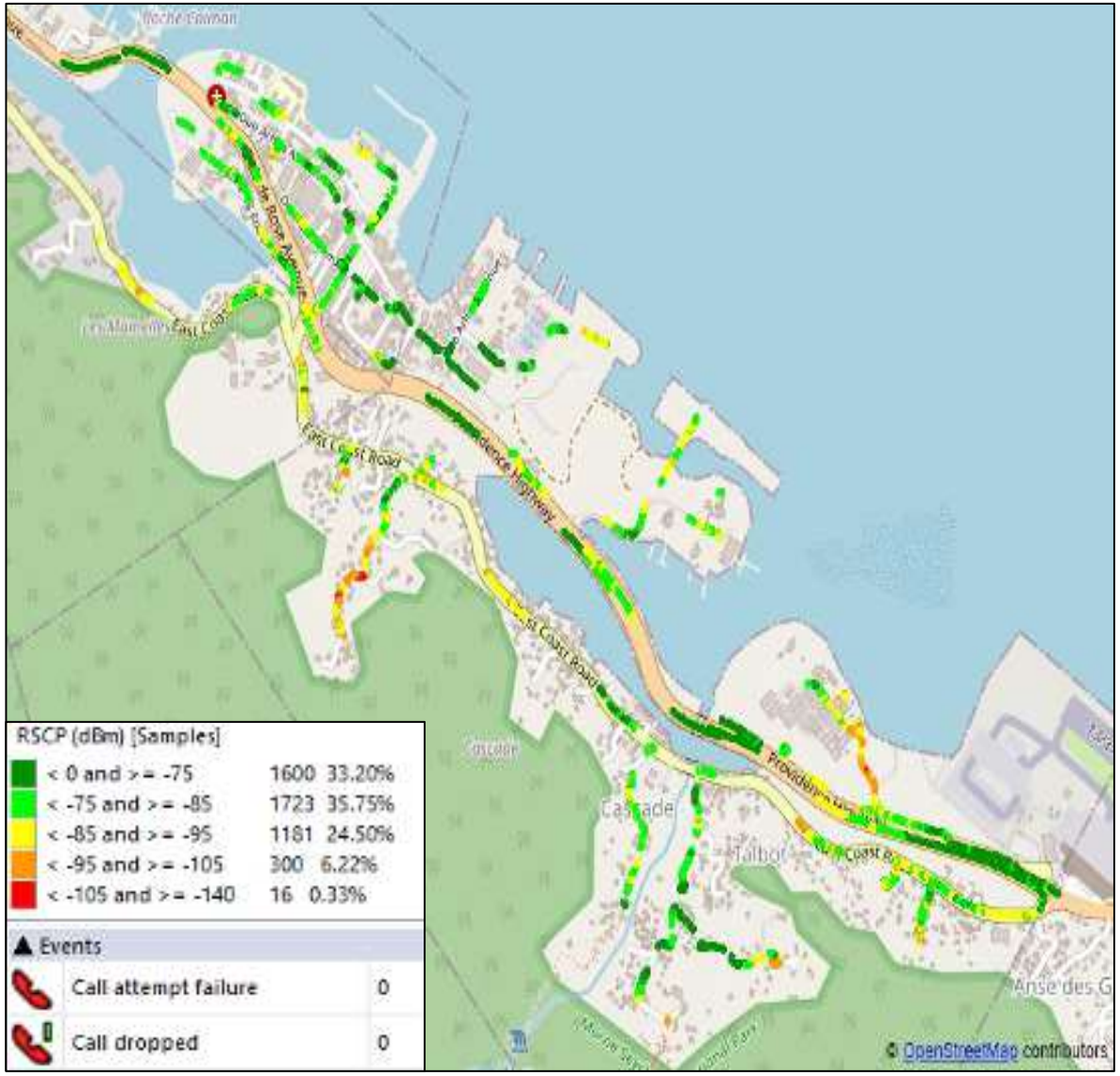


CWS SC MO

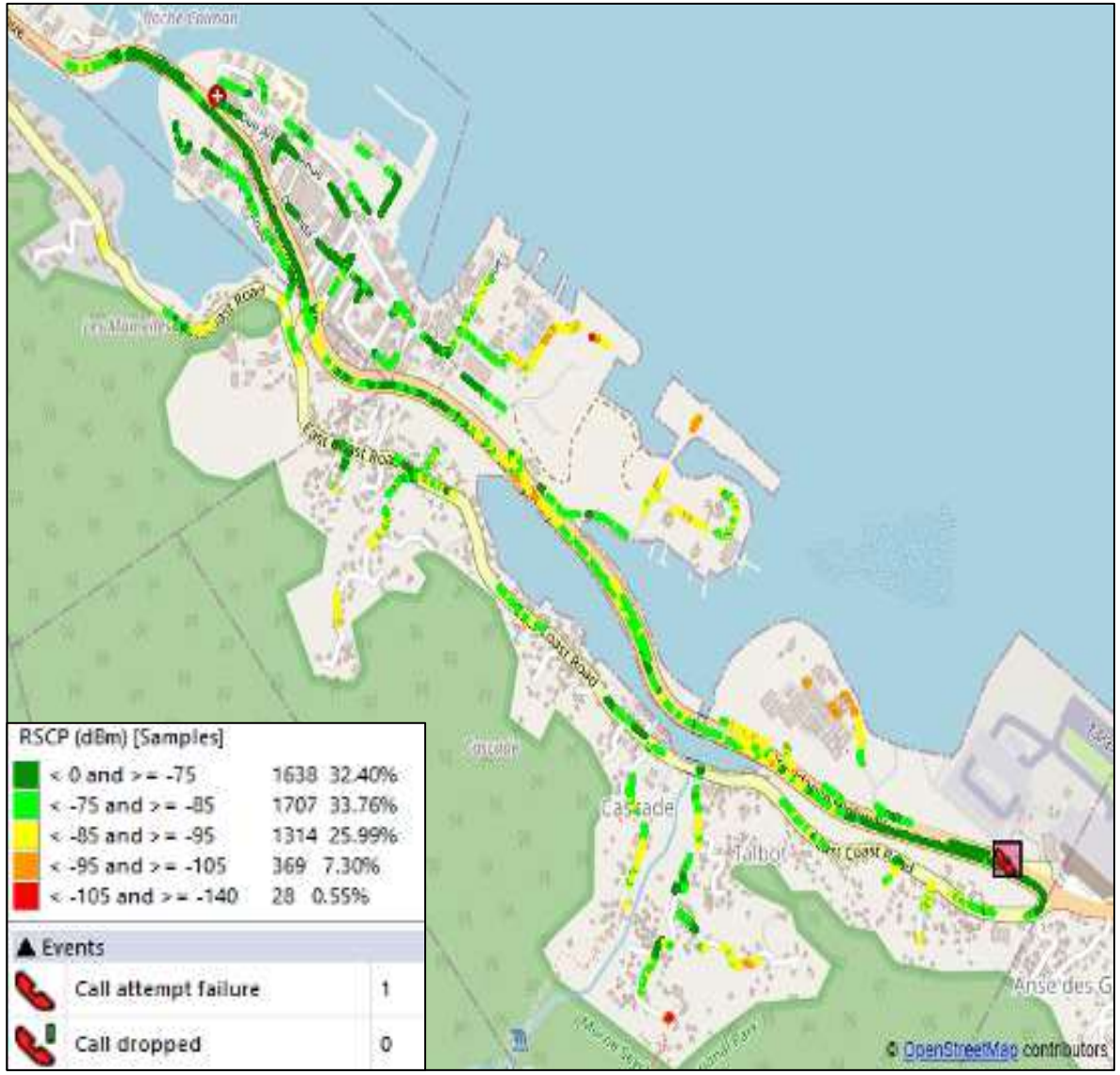


Phase-2 SHORT CALL FAILURE EVENTS LOCATION vs RSCP

Airtel SC MO

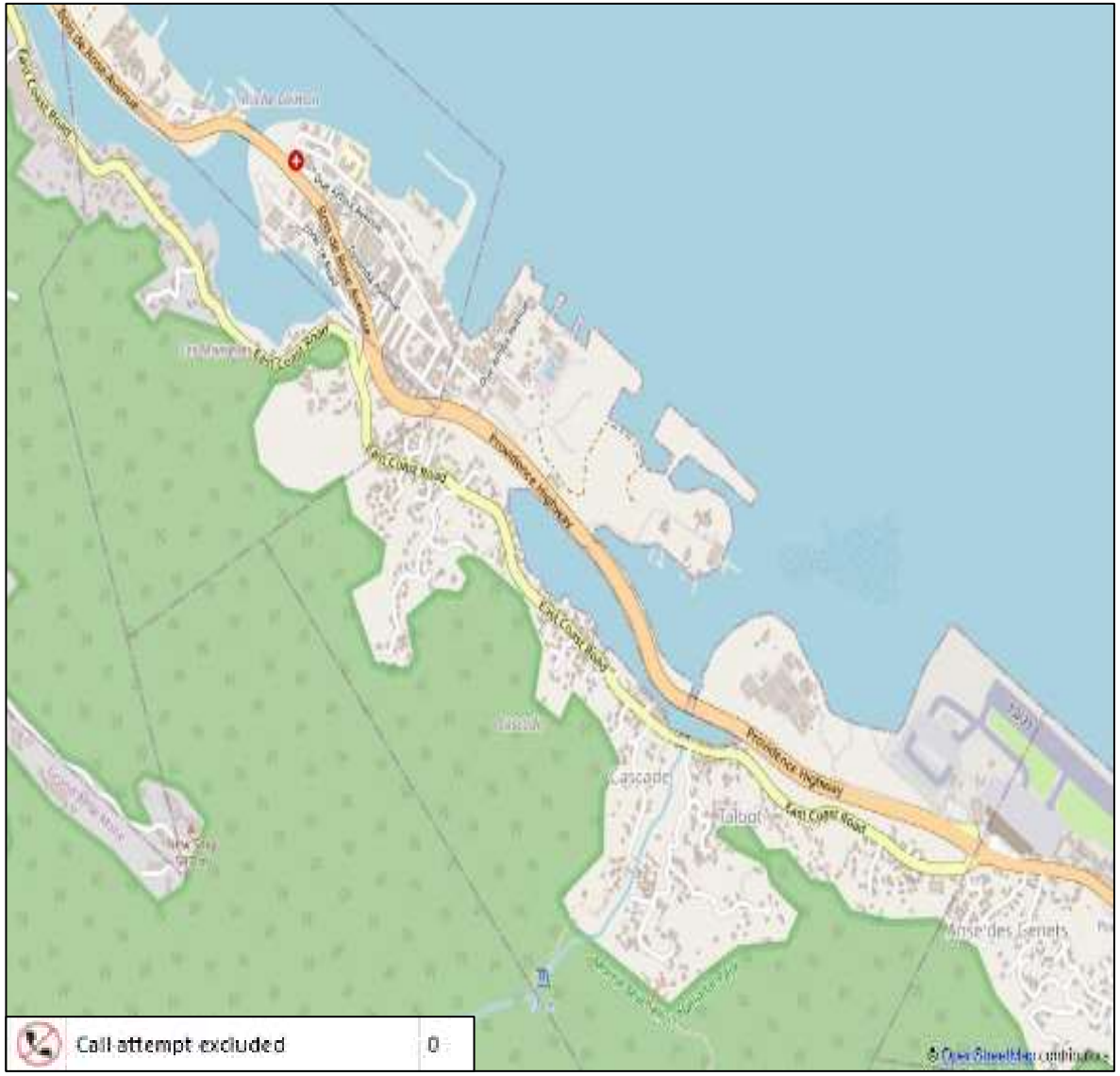


CWS SC MO

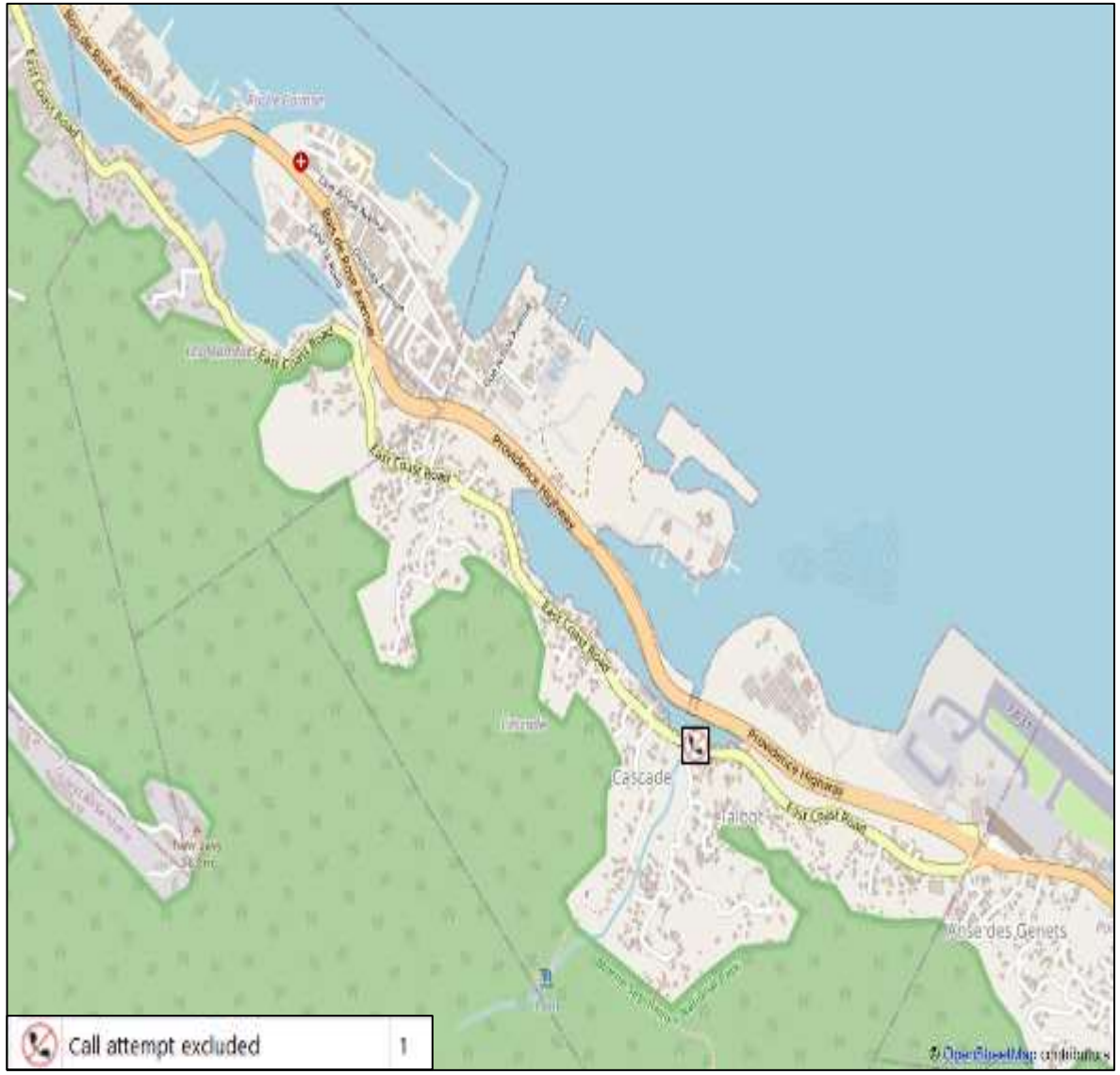


Phase-1 SHORT CALL EXCLUDED EVENTS

Airtel SC MO

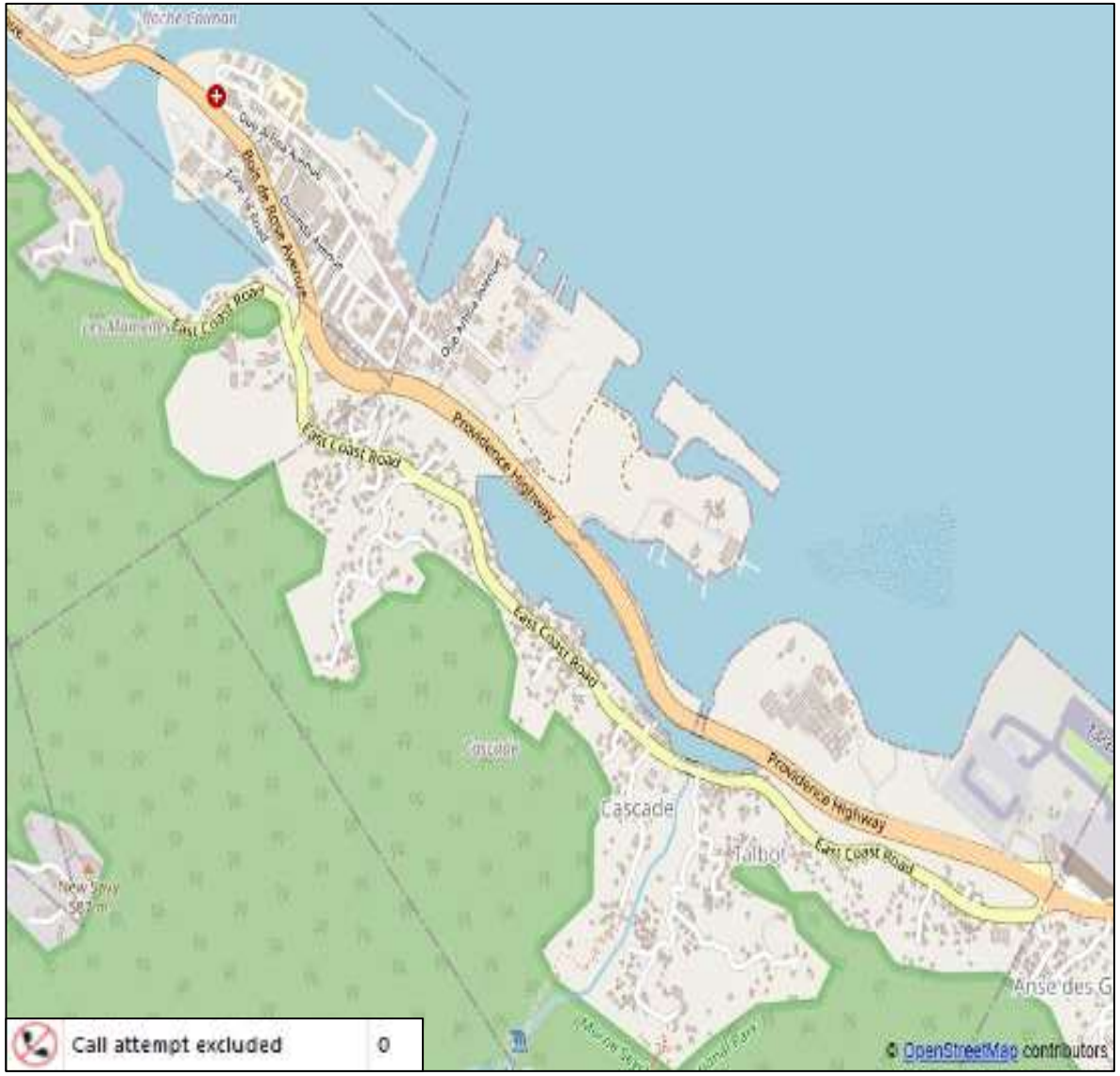


CWS SC MO

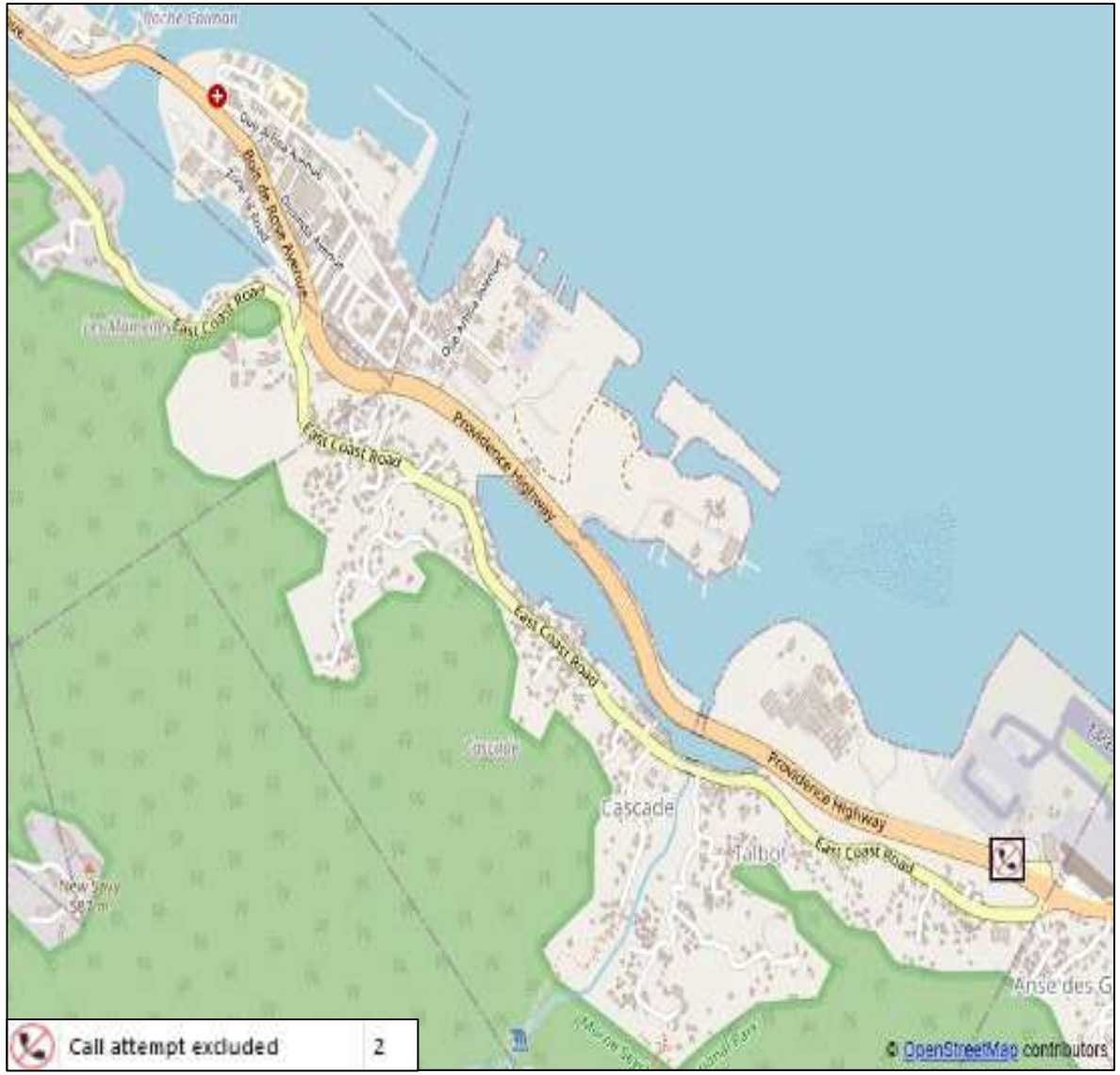


Phase-2 SHORT CALL EXCLUDED EVENTS

Airtel SC MO

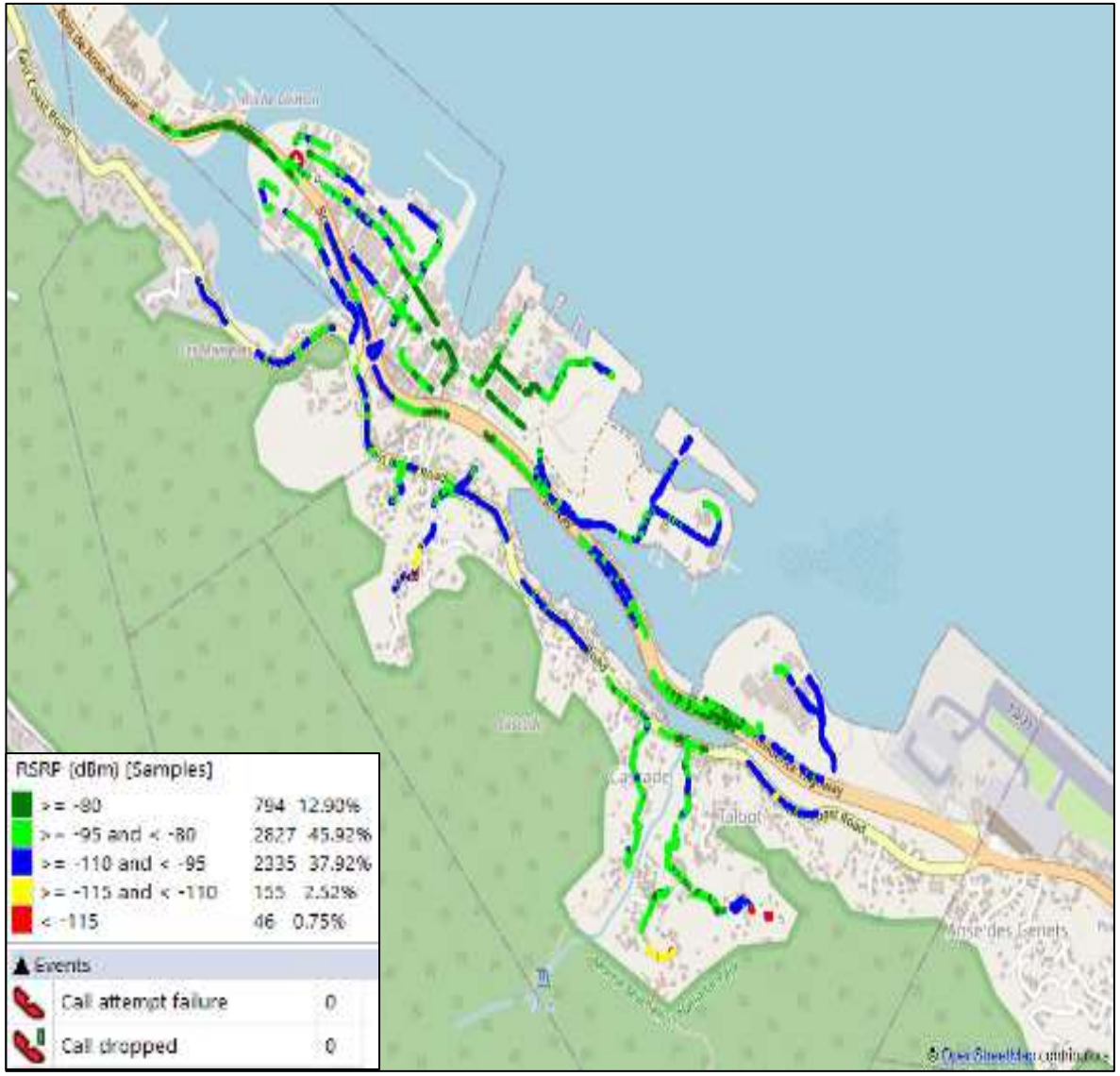


CWS SC MO

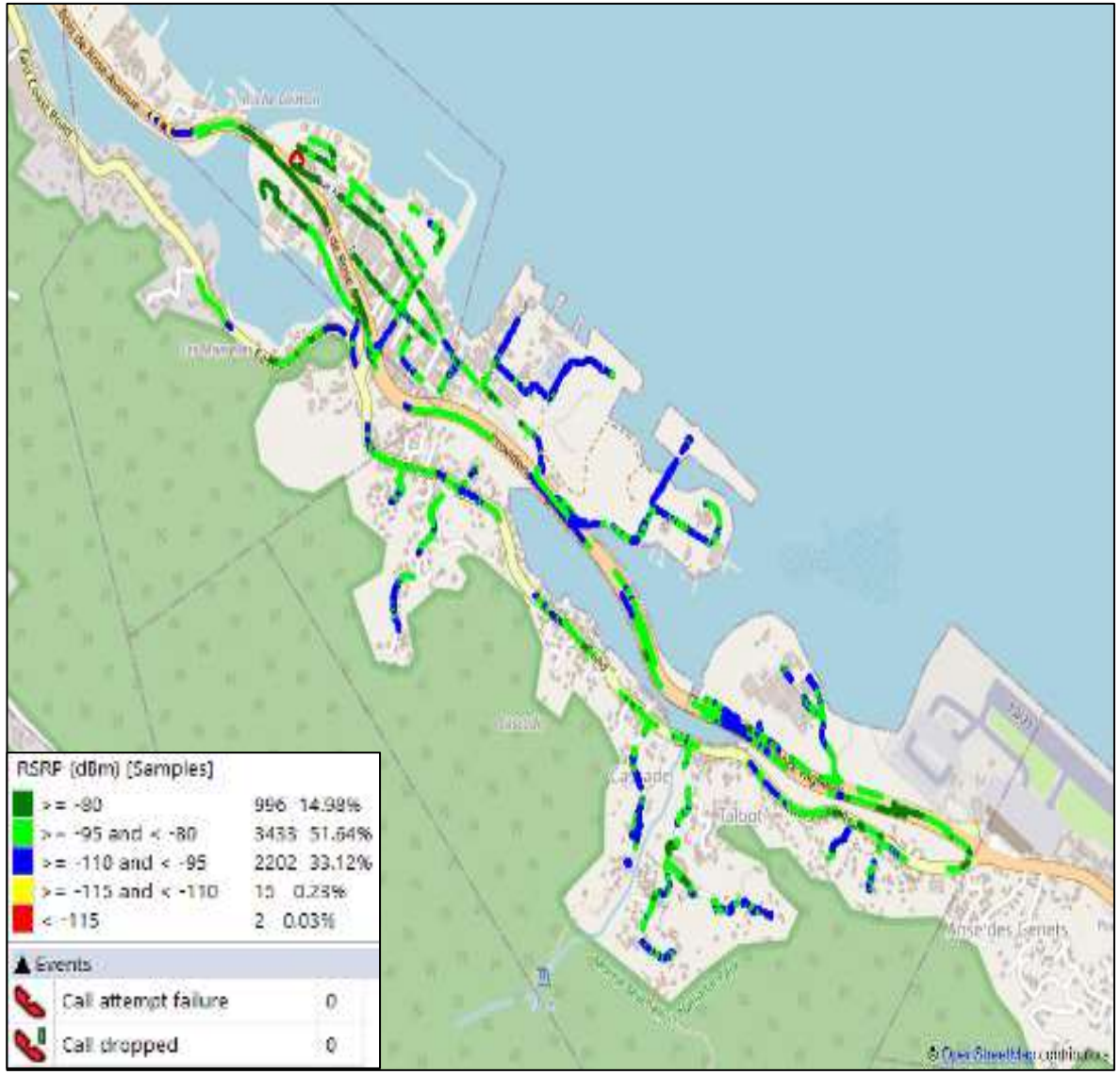


Phase-1 SHORT CALL FAILURE EVENTS LOCATION vs RSRP

Airtel SC MO

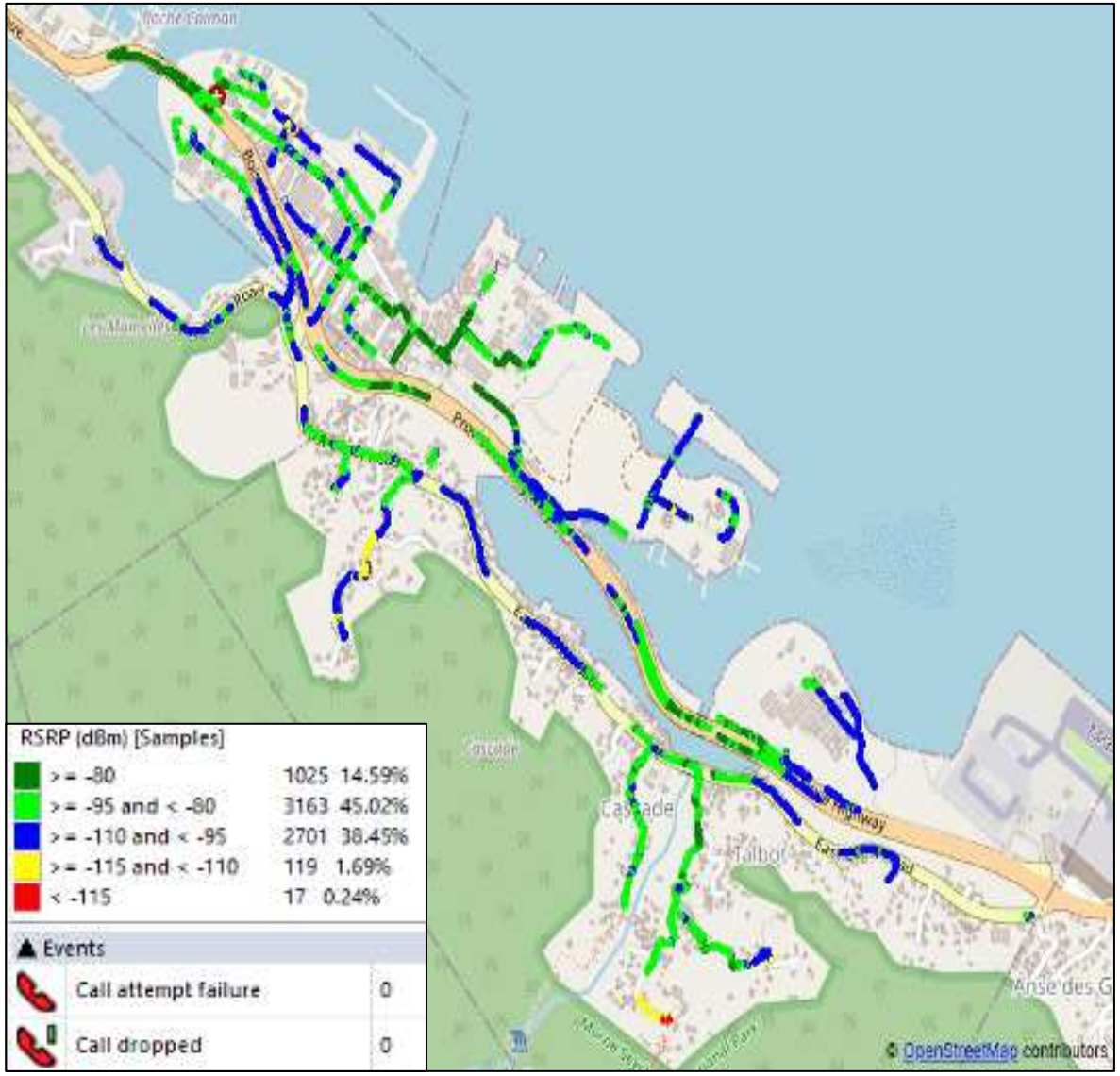


CWS SC MO

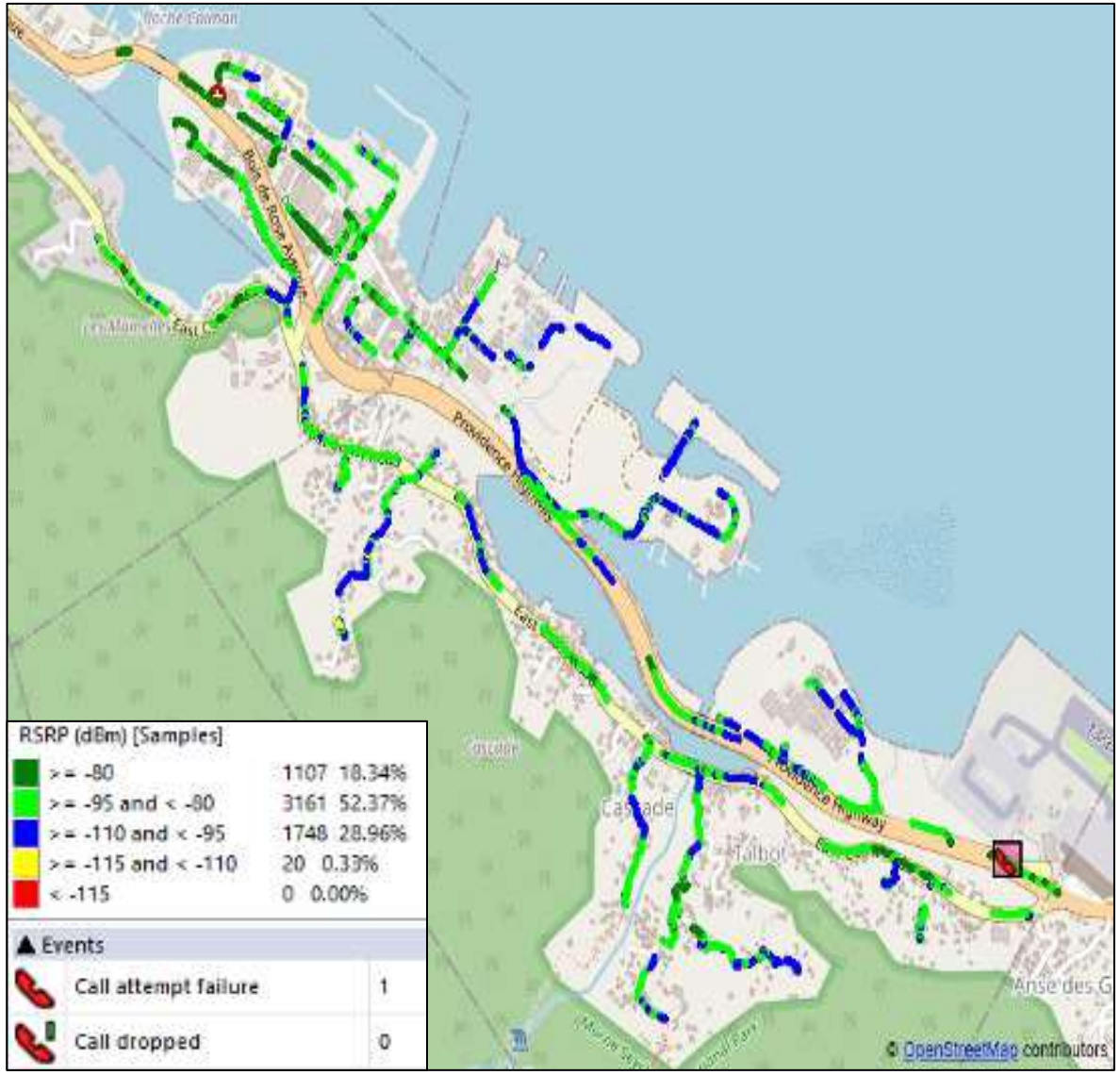


Phase-2 SHORT CALL FAILURE EVENTS LOCATION vs RSRP

Airtel SC MO

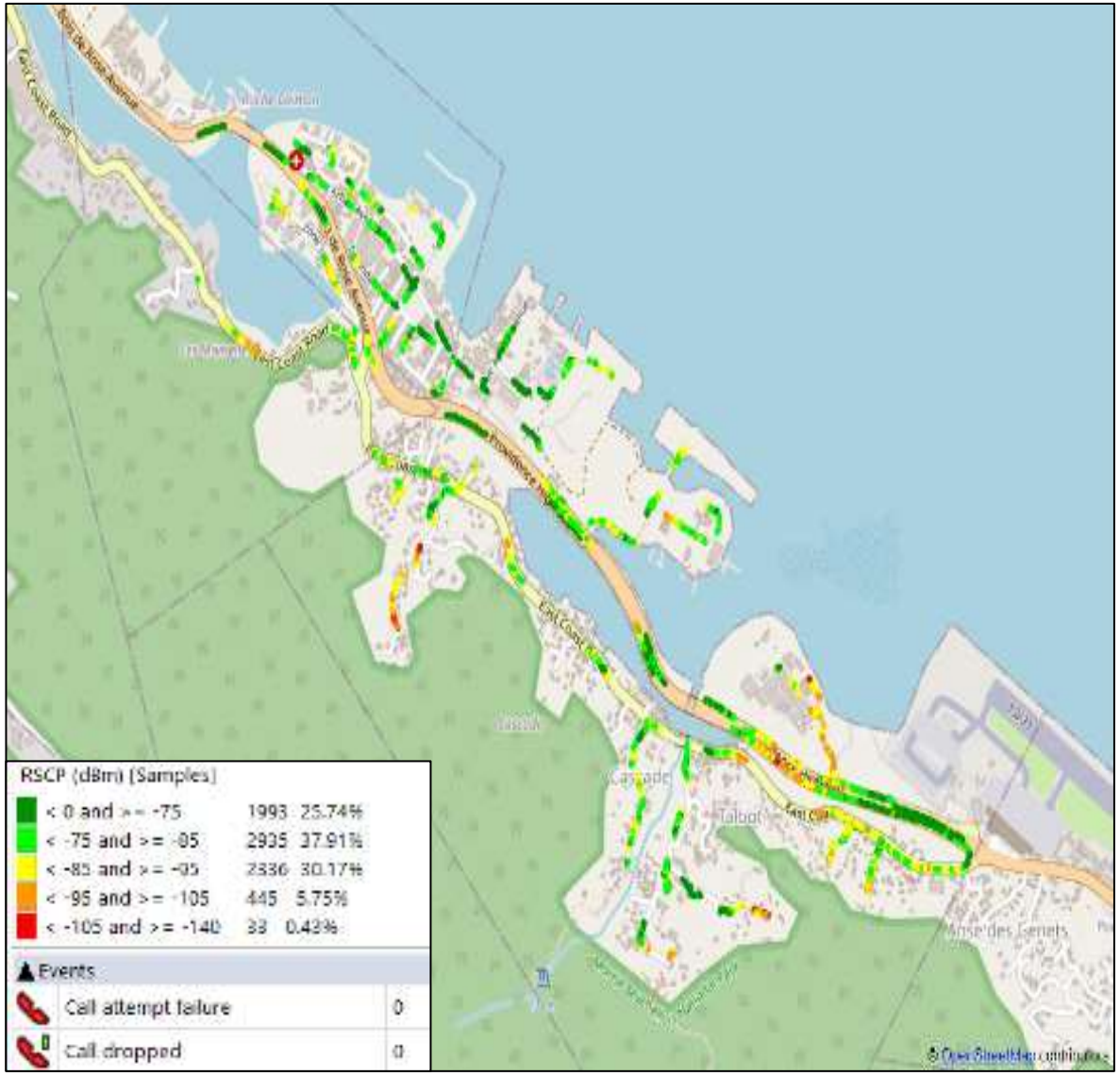


CWS SC MO

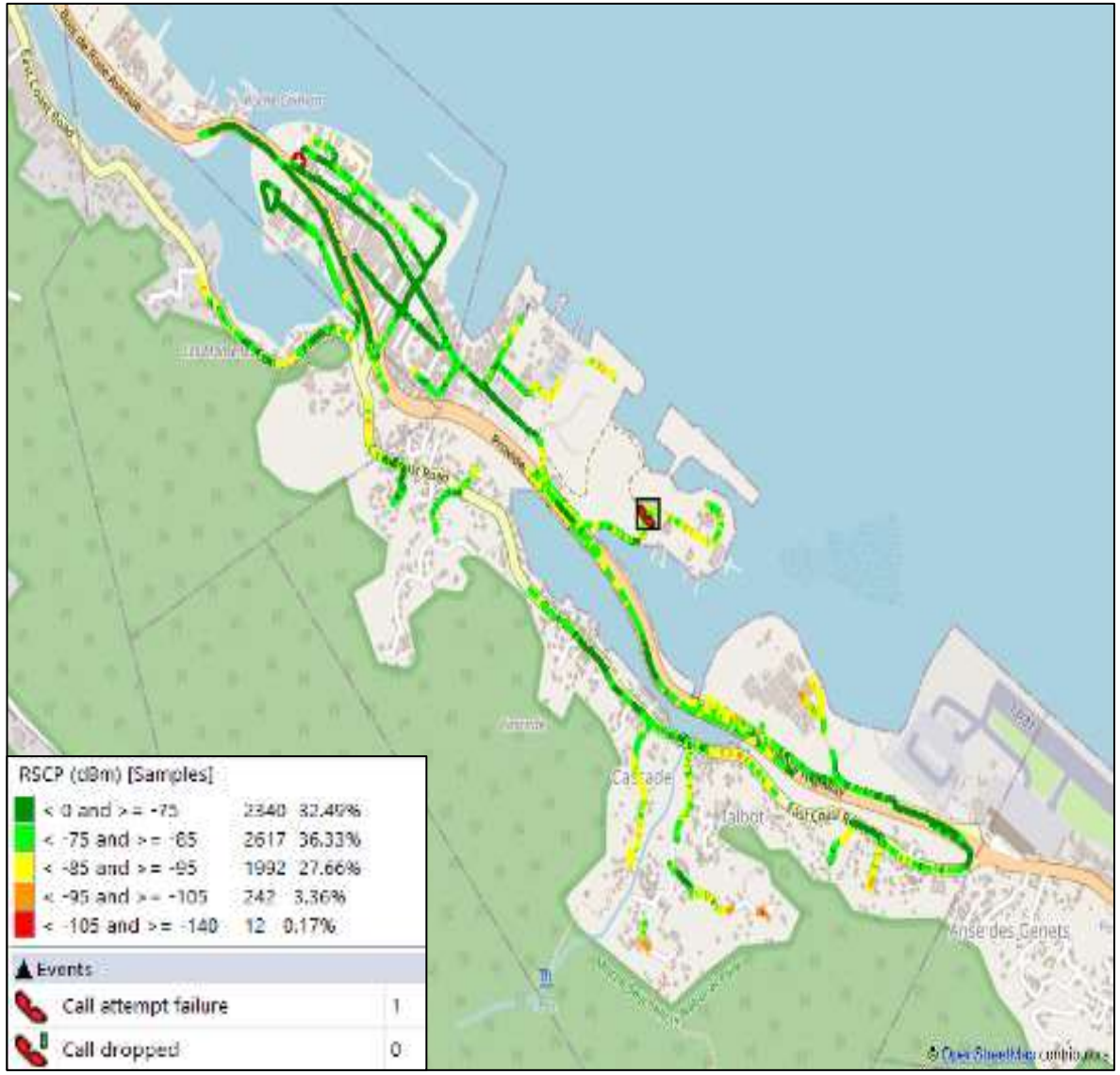


Phase-1 LONG CALL FAILURE EVENTS LOCATION vs RSCP

Airtel LC MO

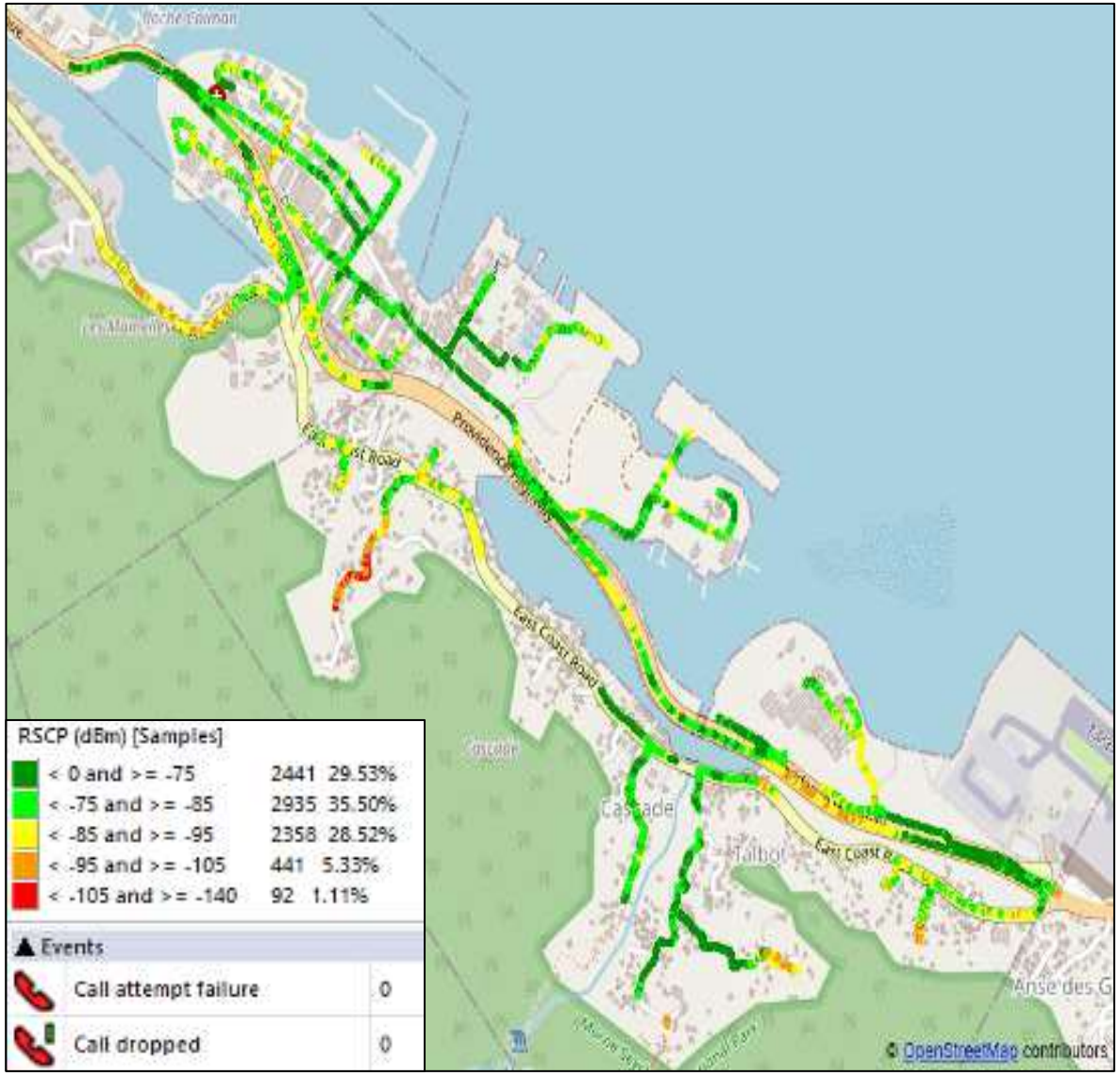


CWS LC MO

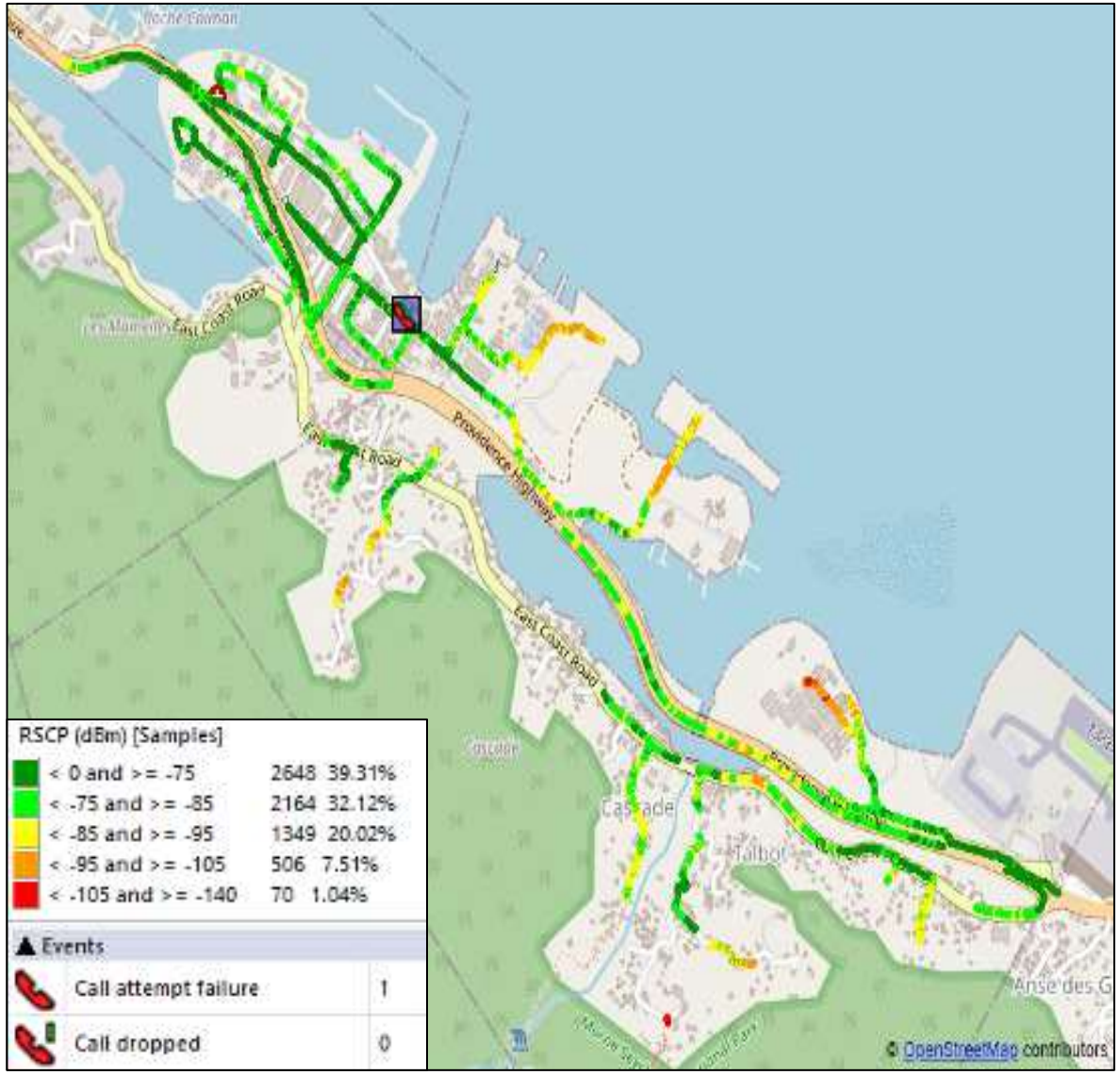


Phase-2 LONG CALL FAILURE EVENTS LOCATION vs RSCP

Airtel LC MO

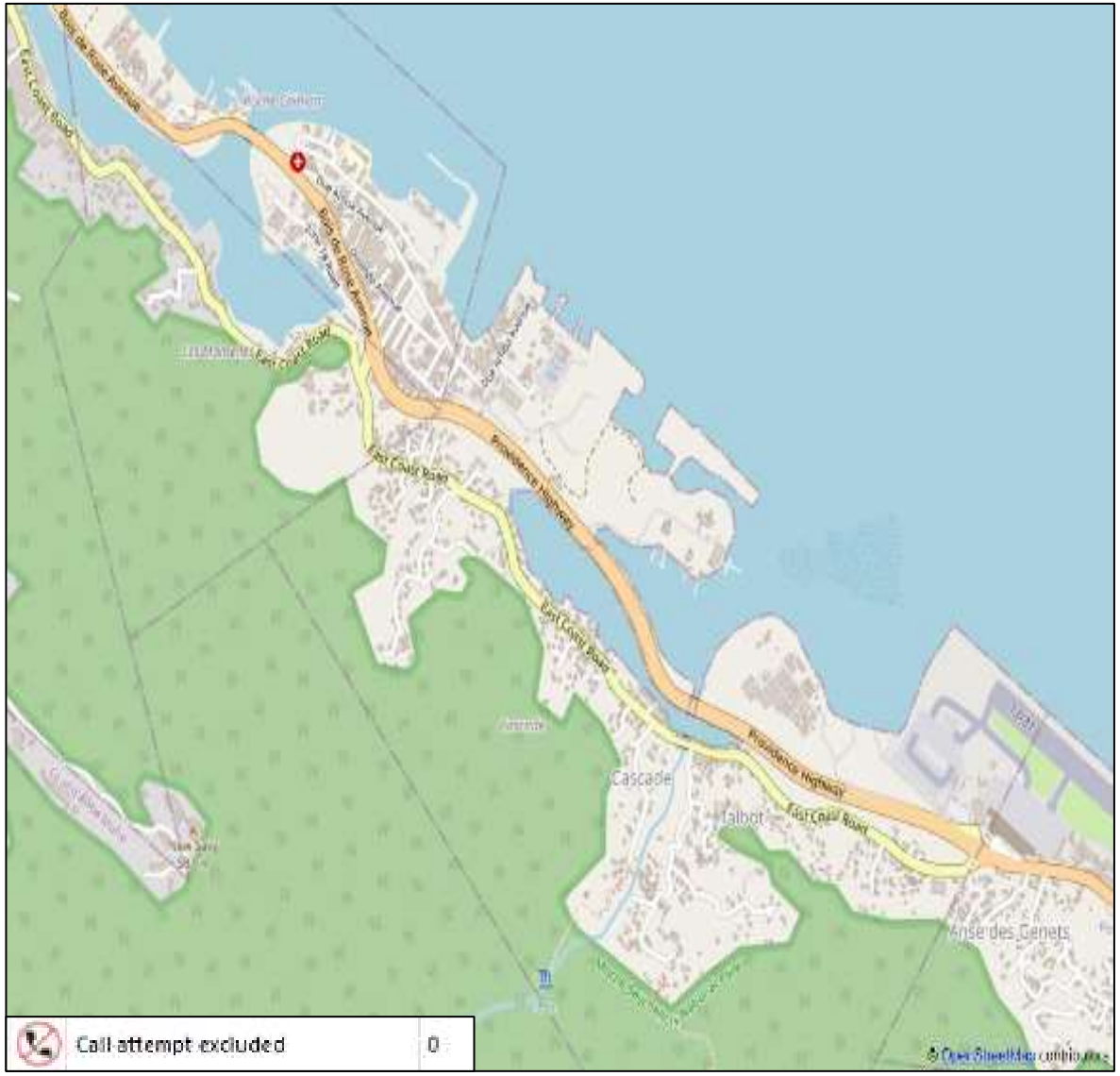


CWS LC MO

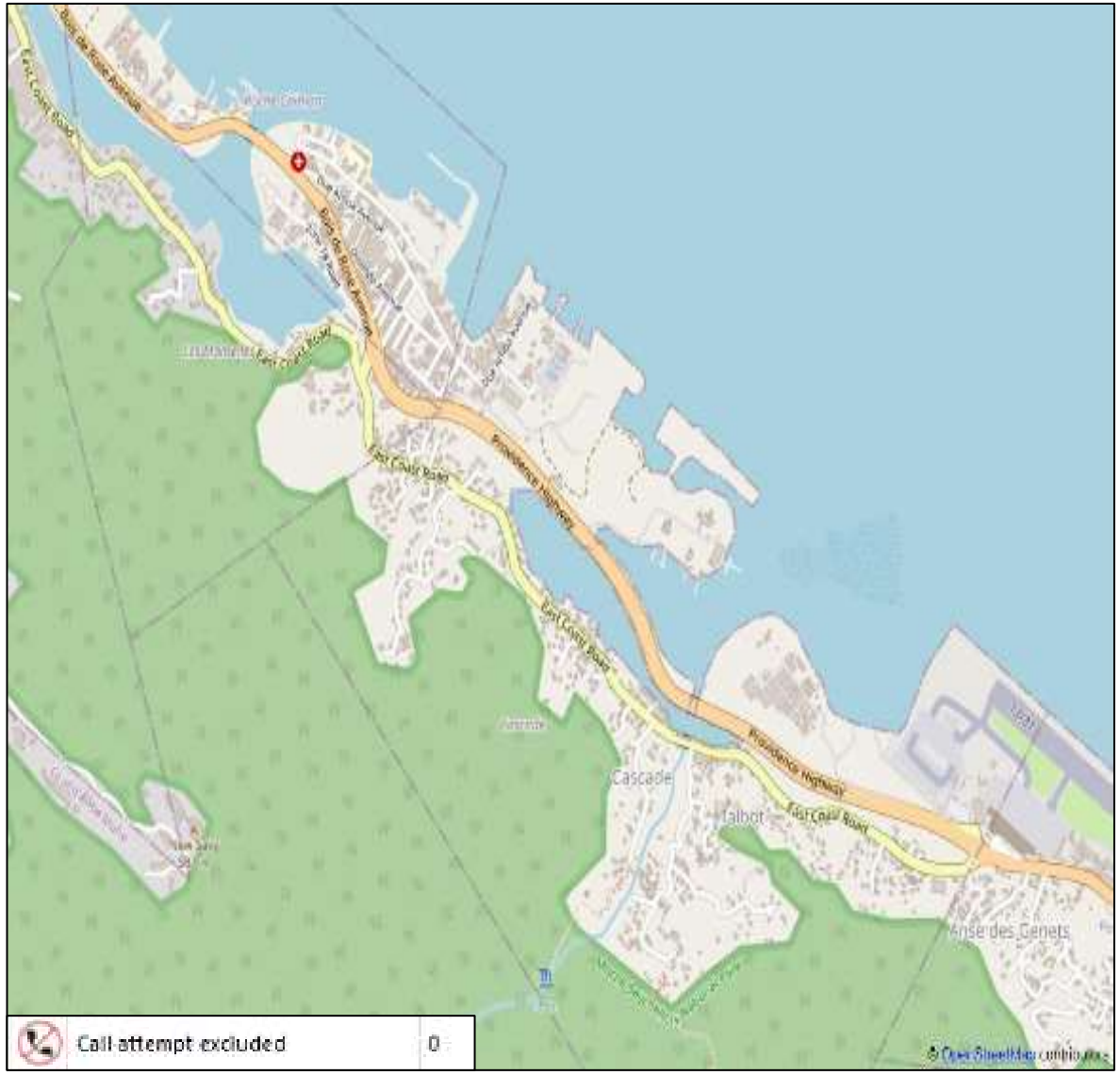


Phase-1 LONG CALL EXCLUDED EVENTS

Airtel LC MO

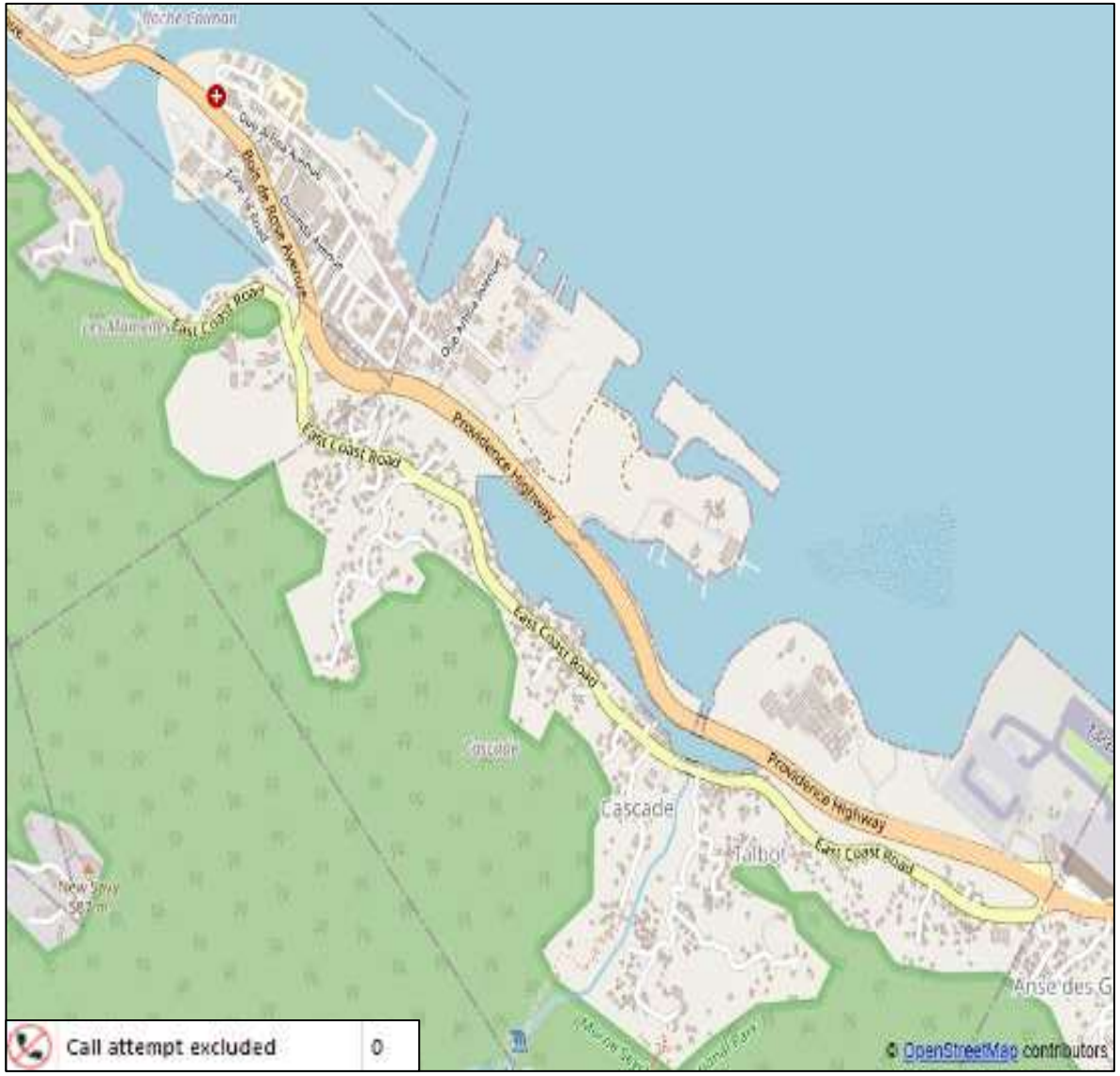


CWS LC MO

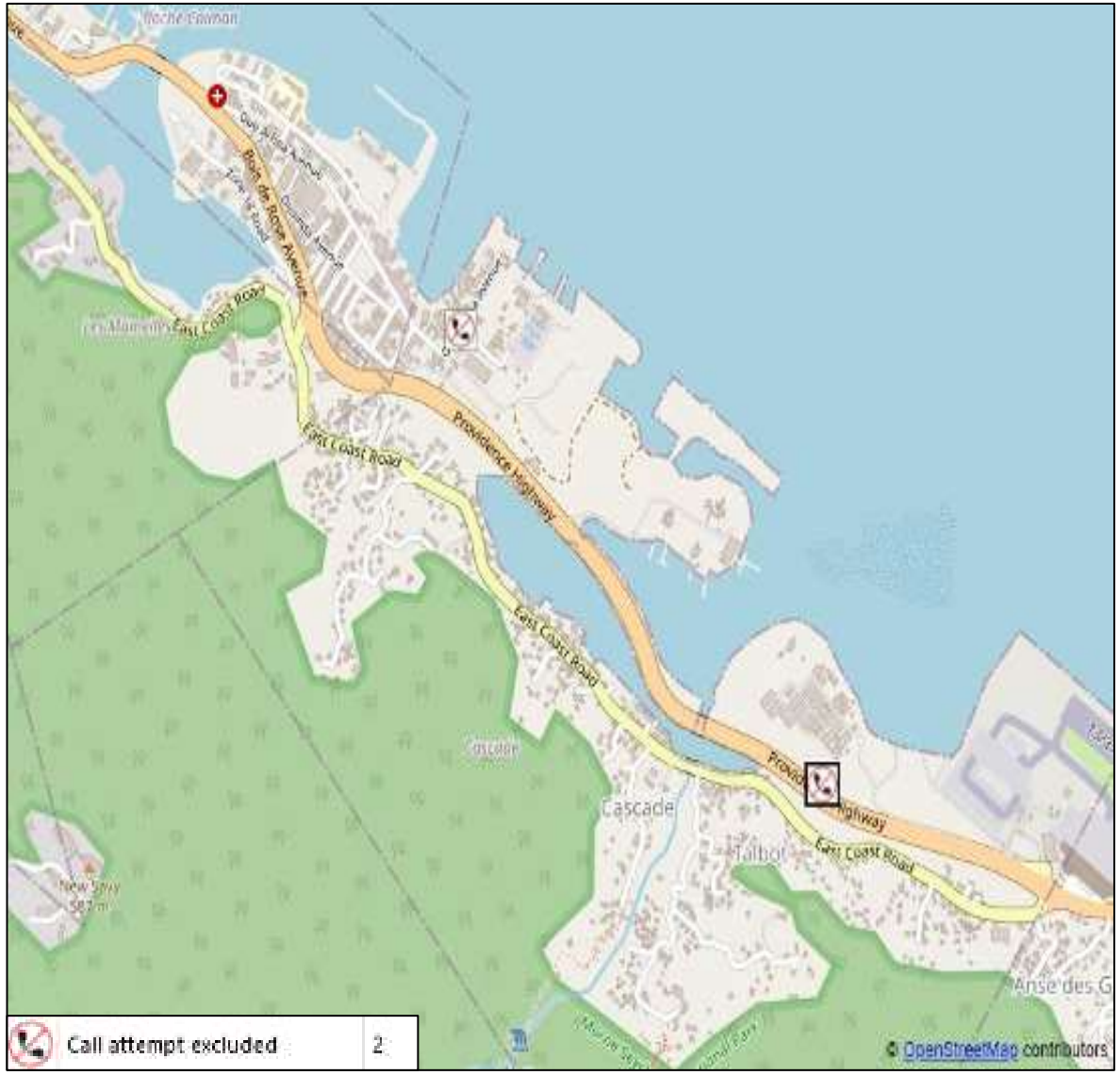


Phase-2 LONG CALL EXCLUDED EVENTS

Airtel LC MO

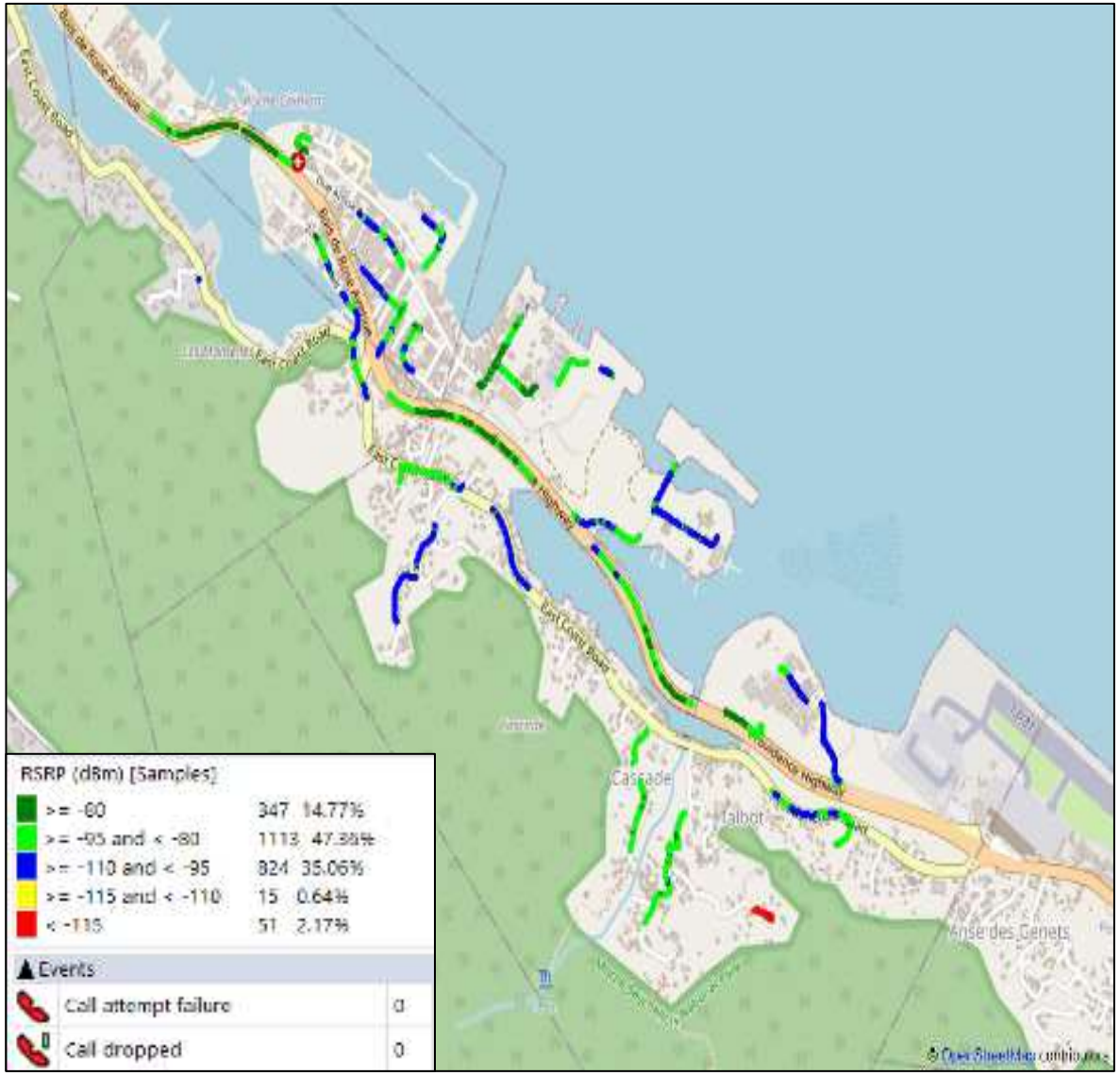


CWS LC MO

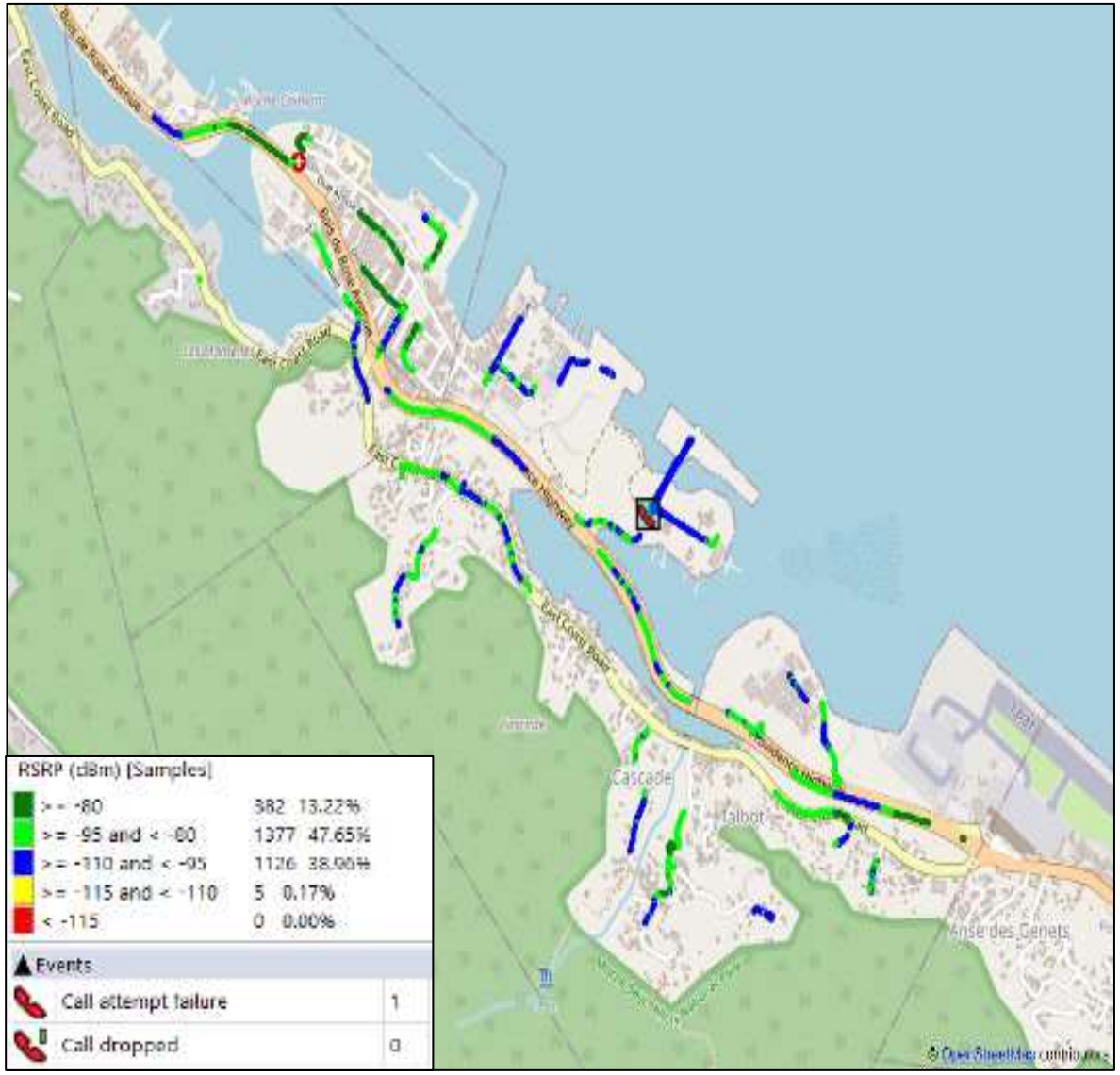


Phase-1 LONG CALL FAILURE EVENTS LOCATION vs RSRP

Airtel LC MO

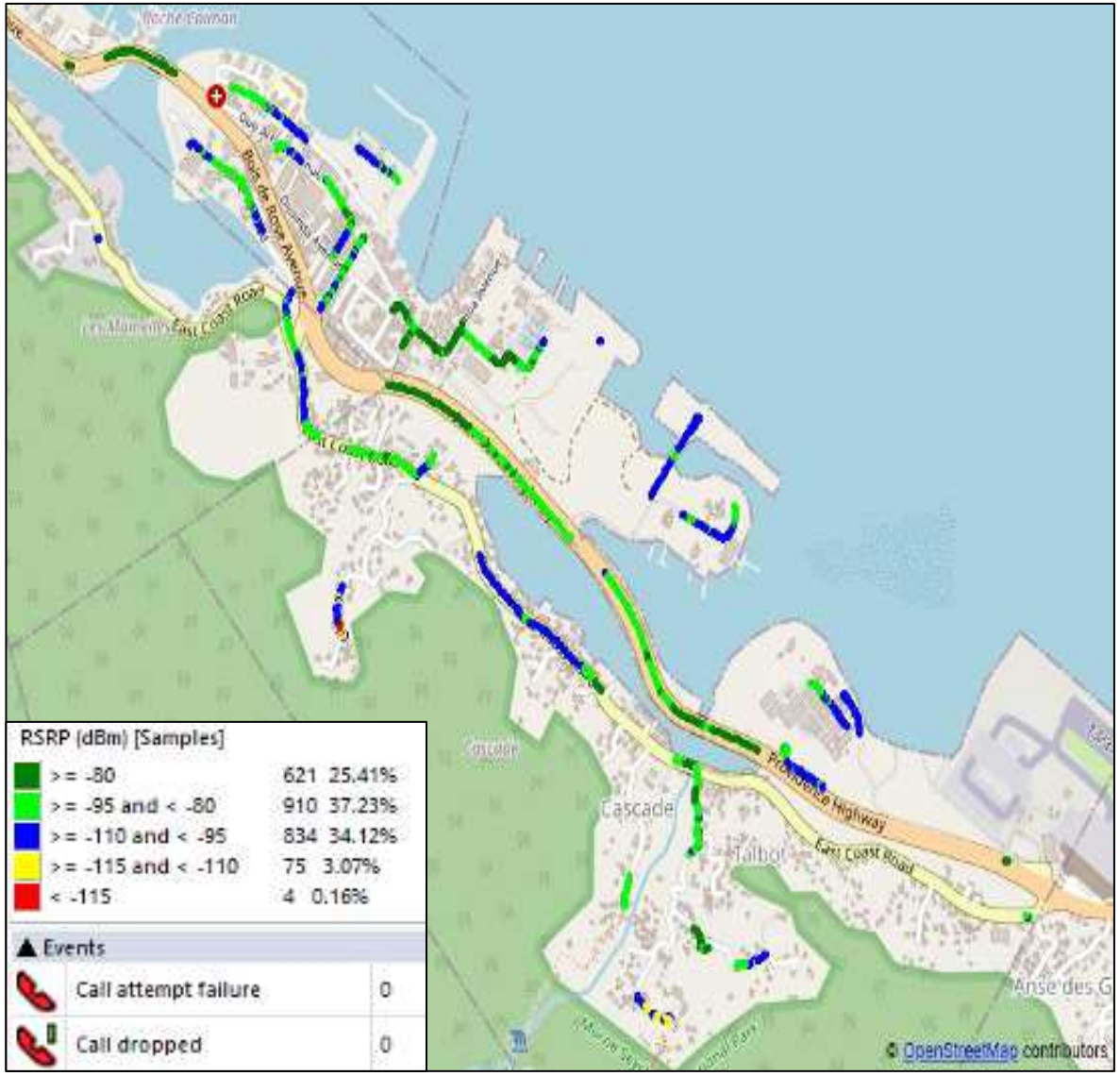


CWS LC MO

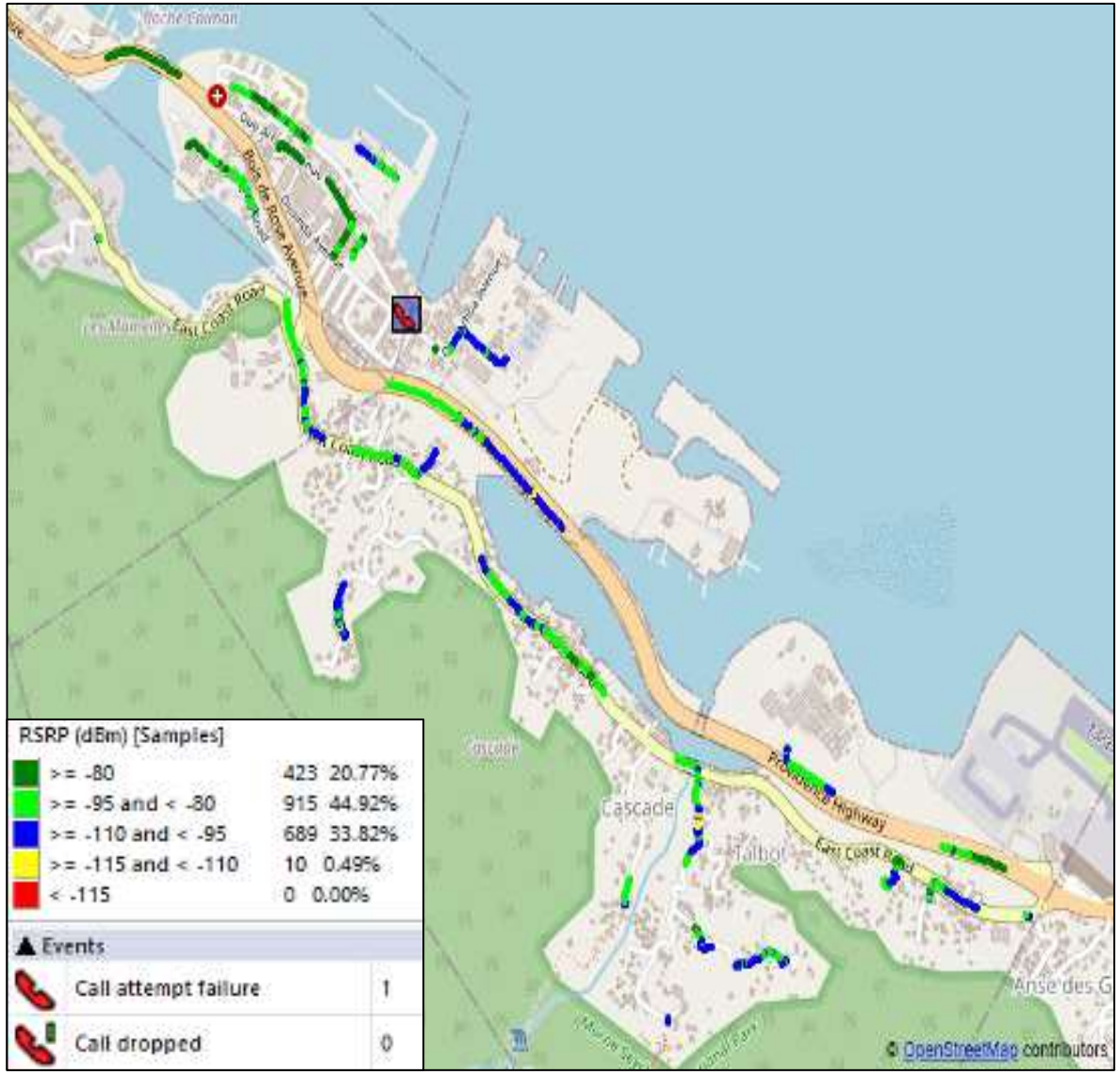


Phase-2 LONG CALL FAILURE EVENTS LOCATION vs RSRP

Airtel LC MO



CWS LC MO

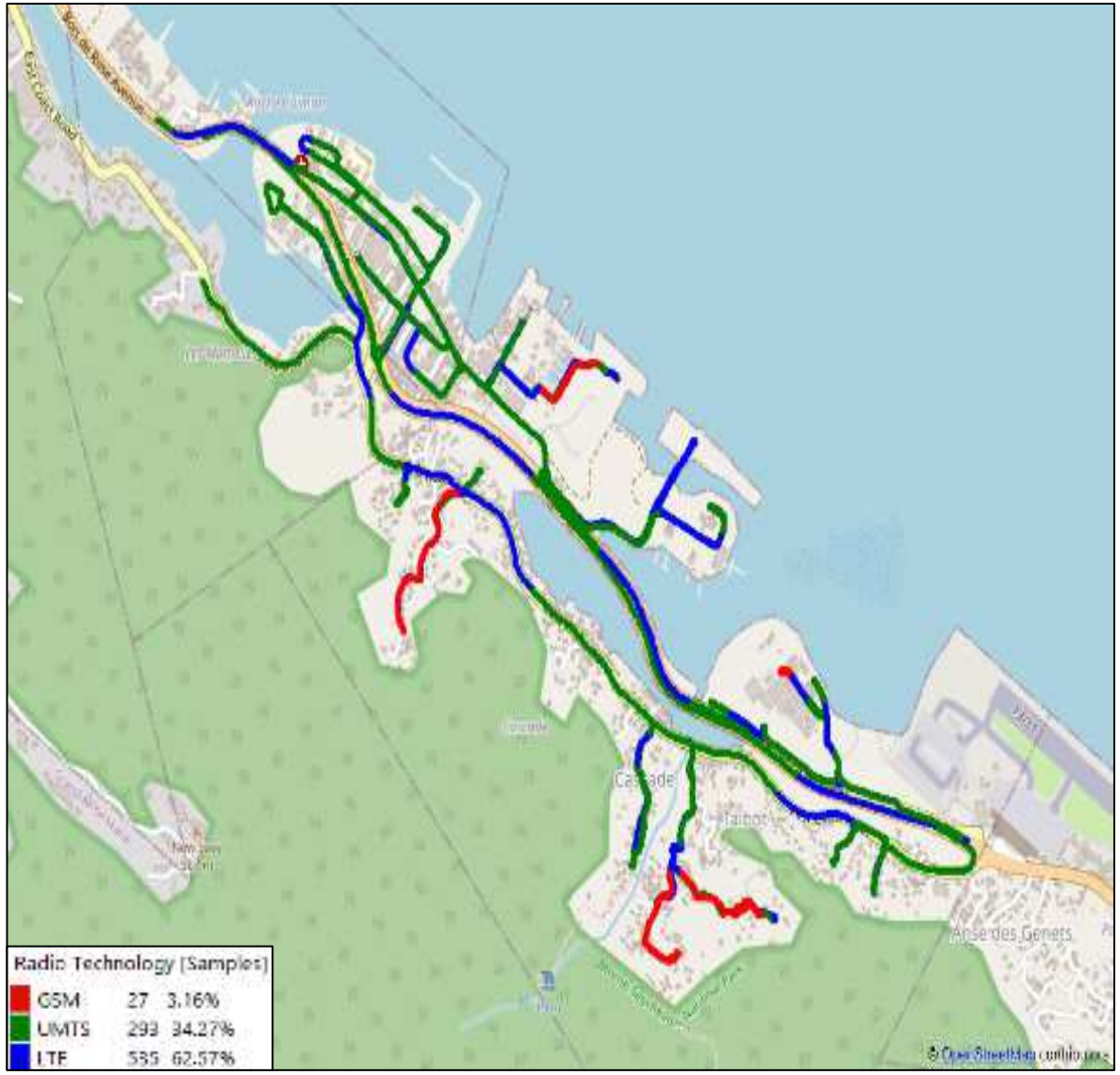


LONG CALL DRIVE PLOTS

Phase-1 Long Call RADIO TECHNOLOGY PLOT

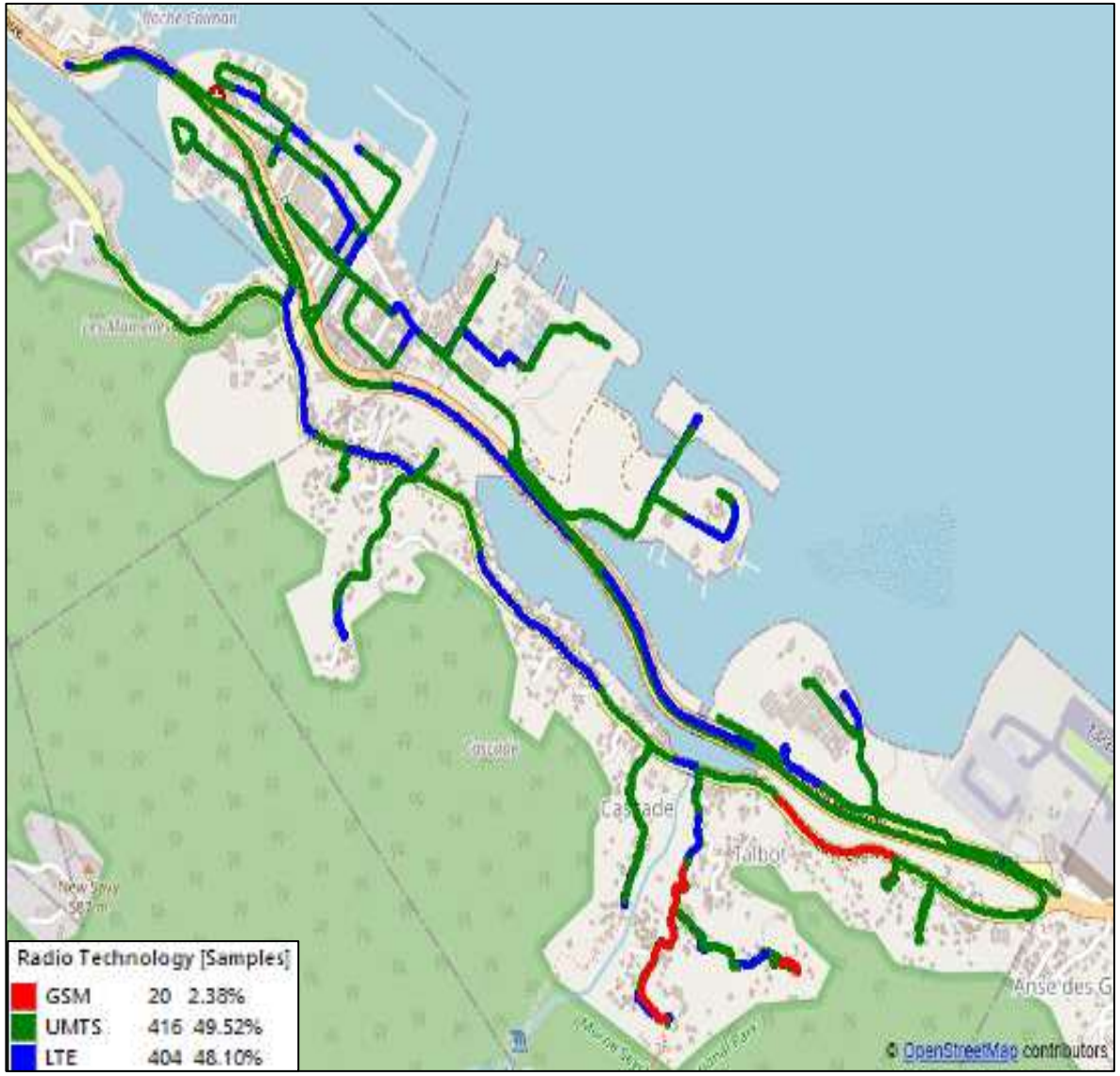
Airtel LC MO

CWS LC MO

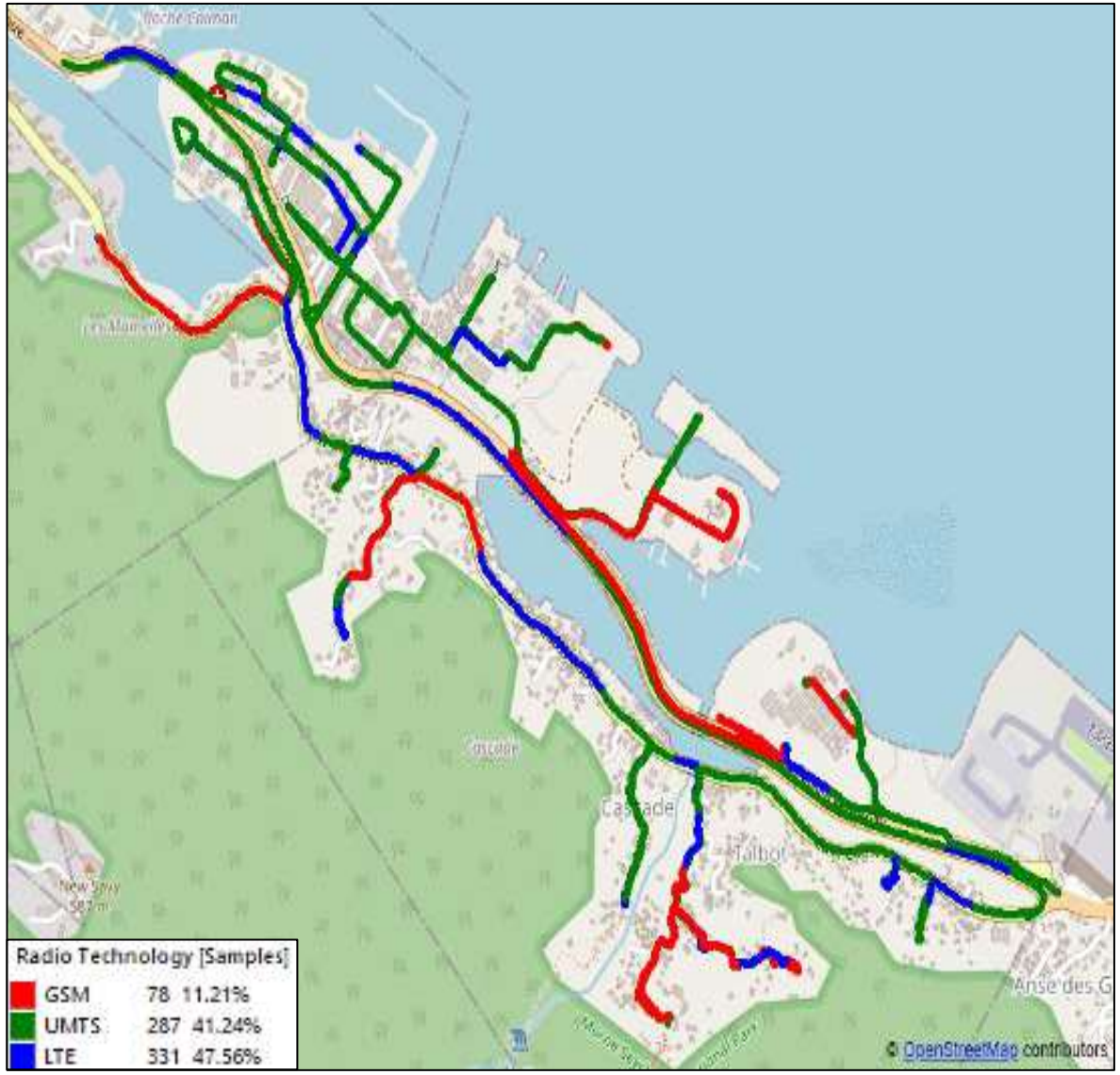


Phase-2 Long Call RADIO TECHNOLOGY PLOT

Airtel LC MO

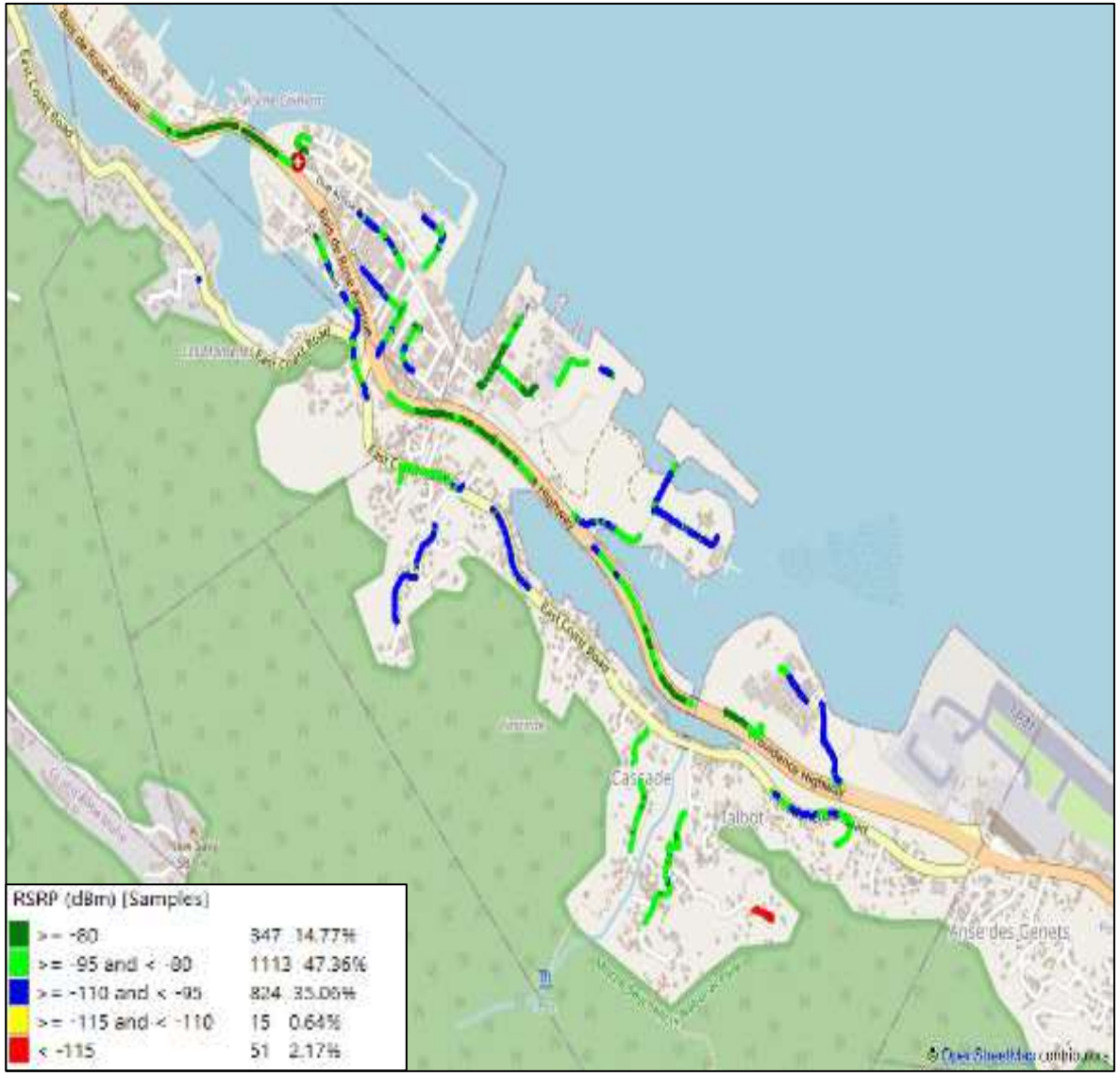


CWS LC MO

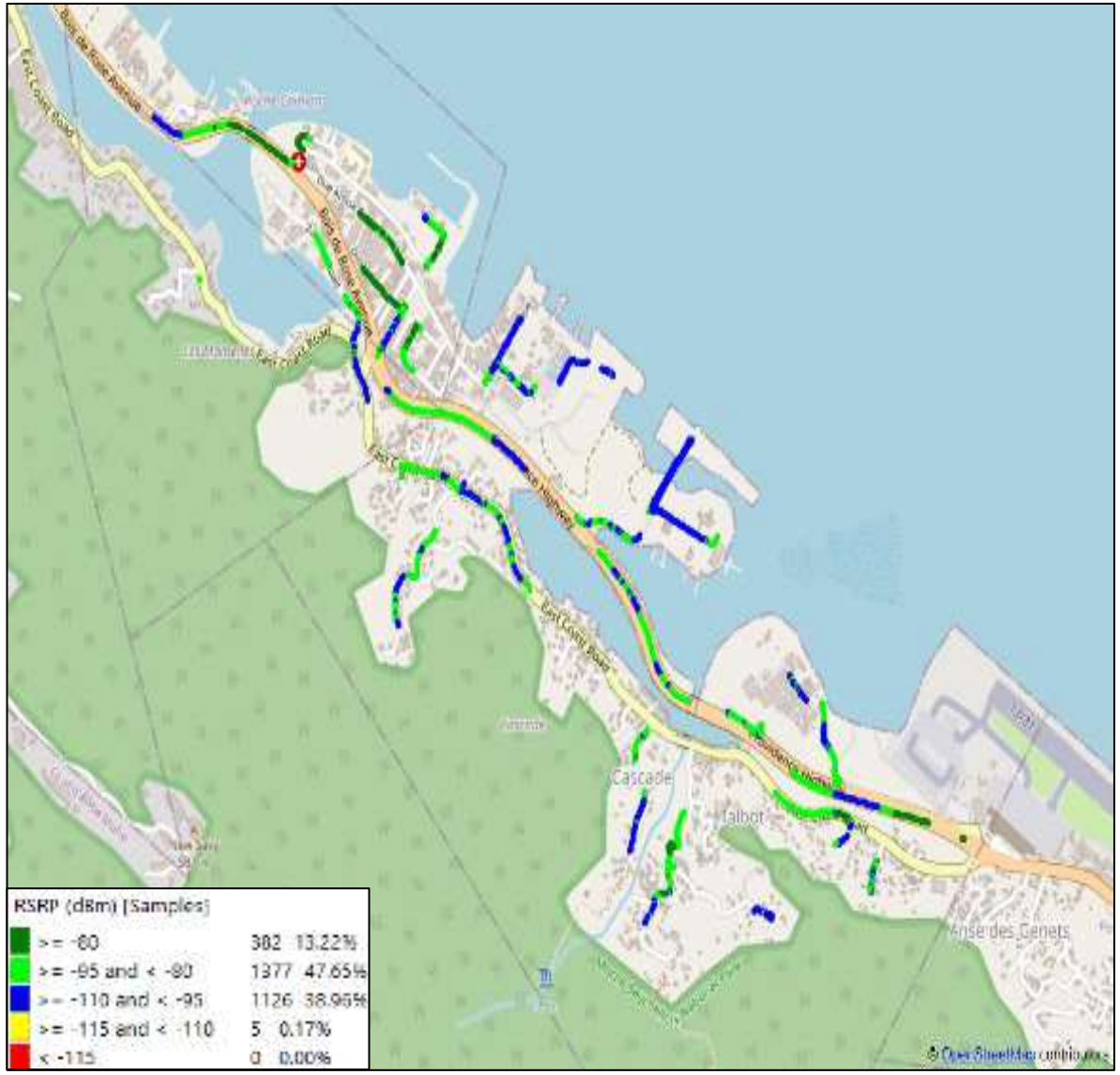


Phase-1 Long Call RSRP PLOT

Airtel LC MO

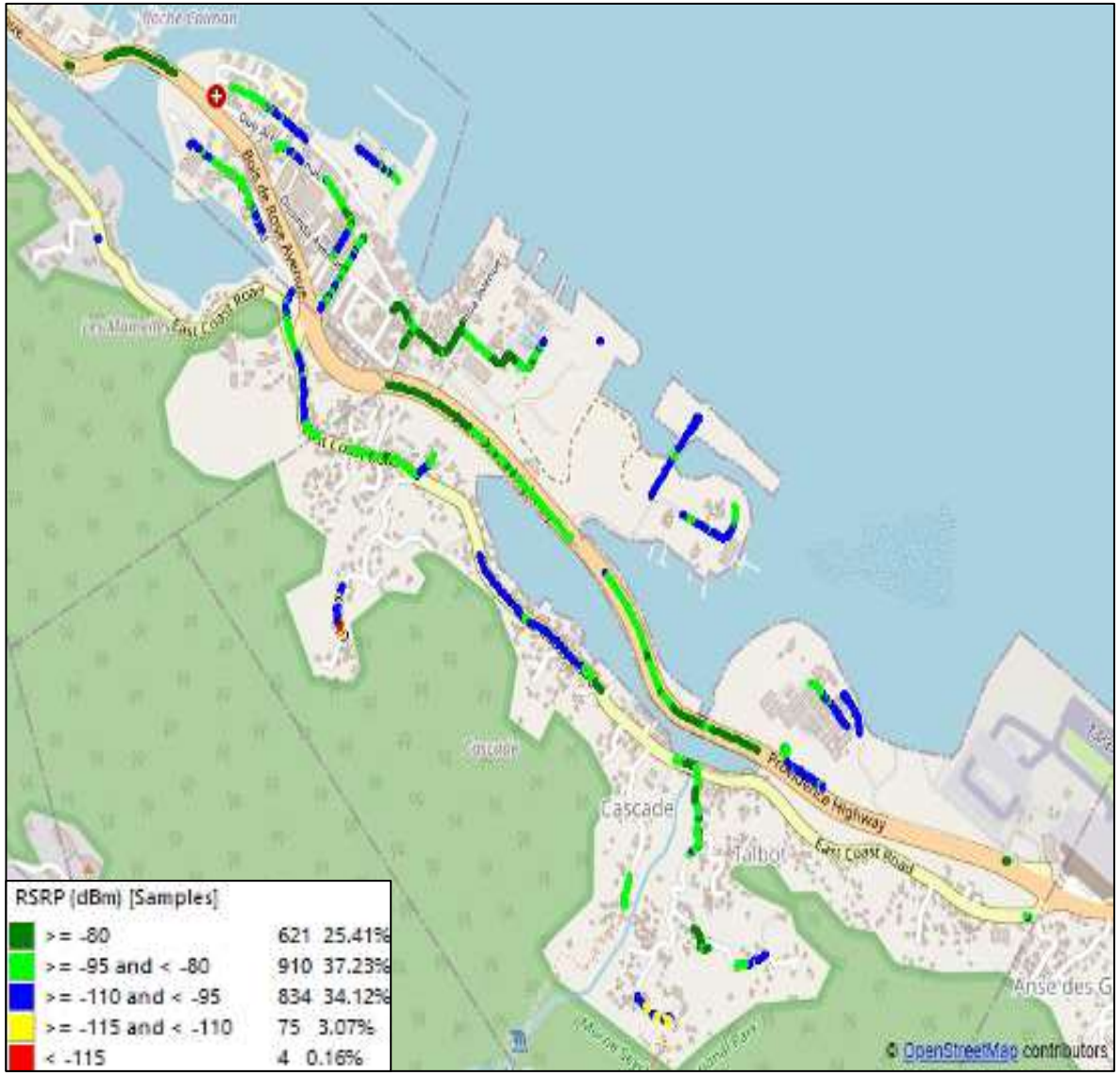


CWS LC MO

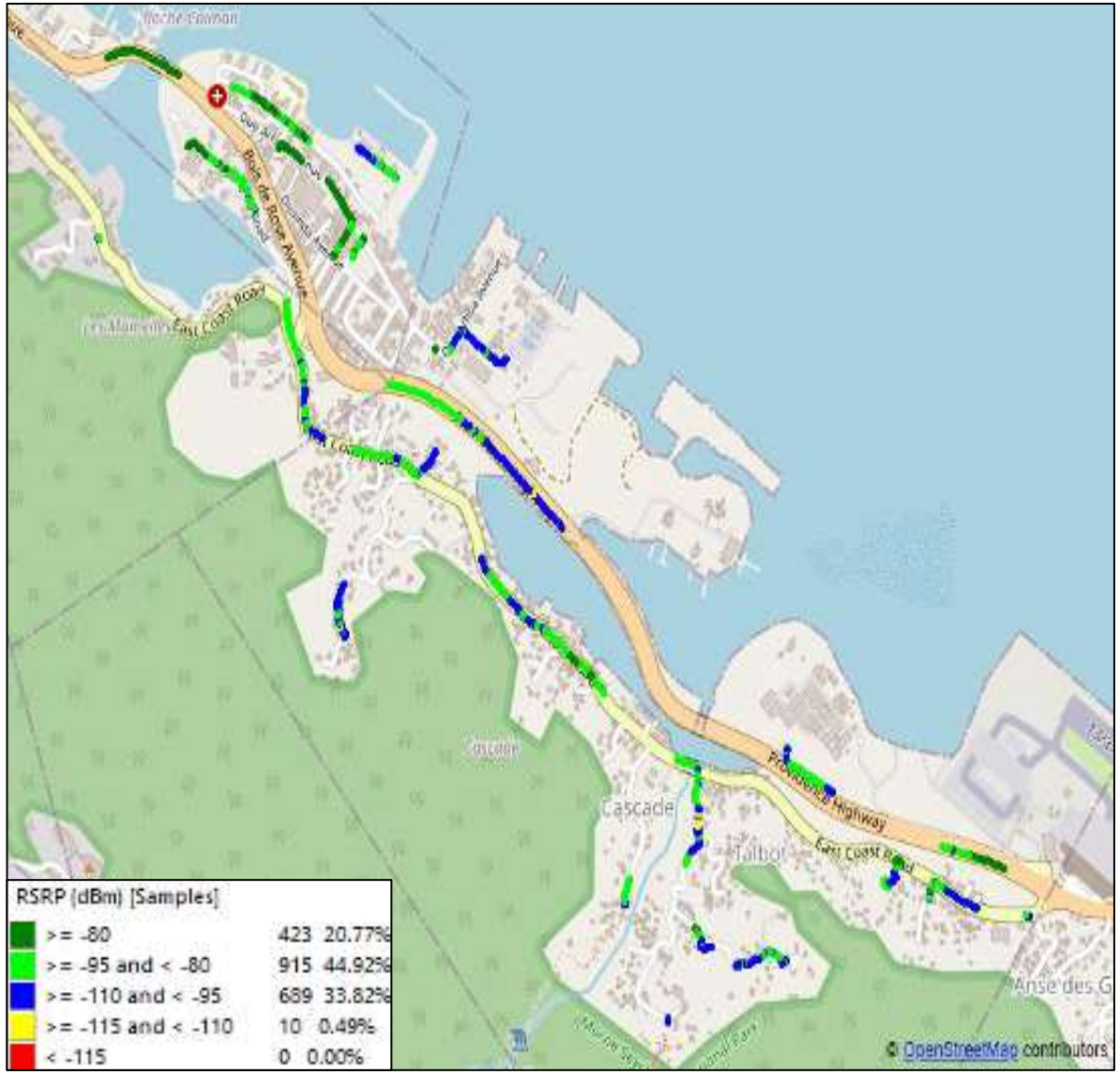


Phase-2 Long Call RSRP PLOT

Airtel LC MO

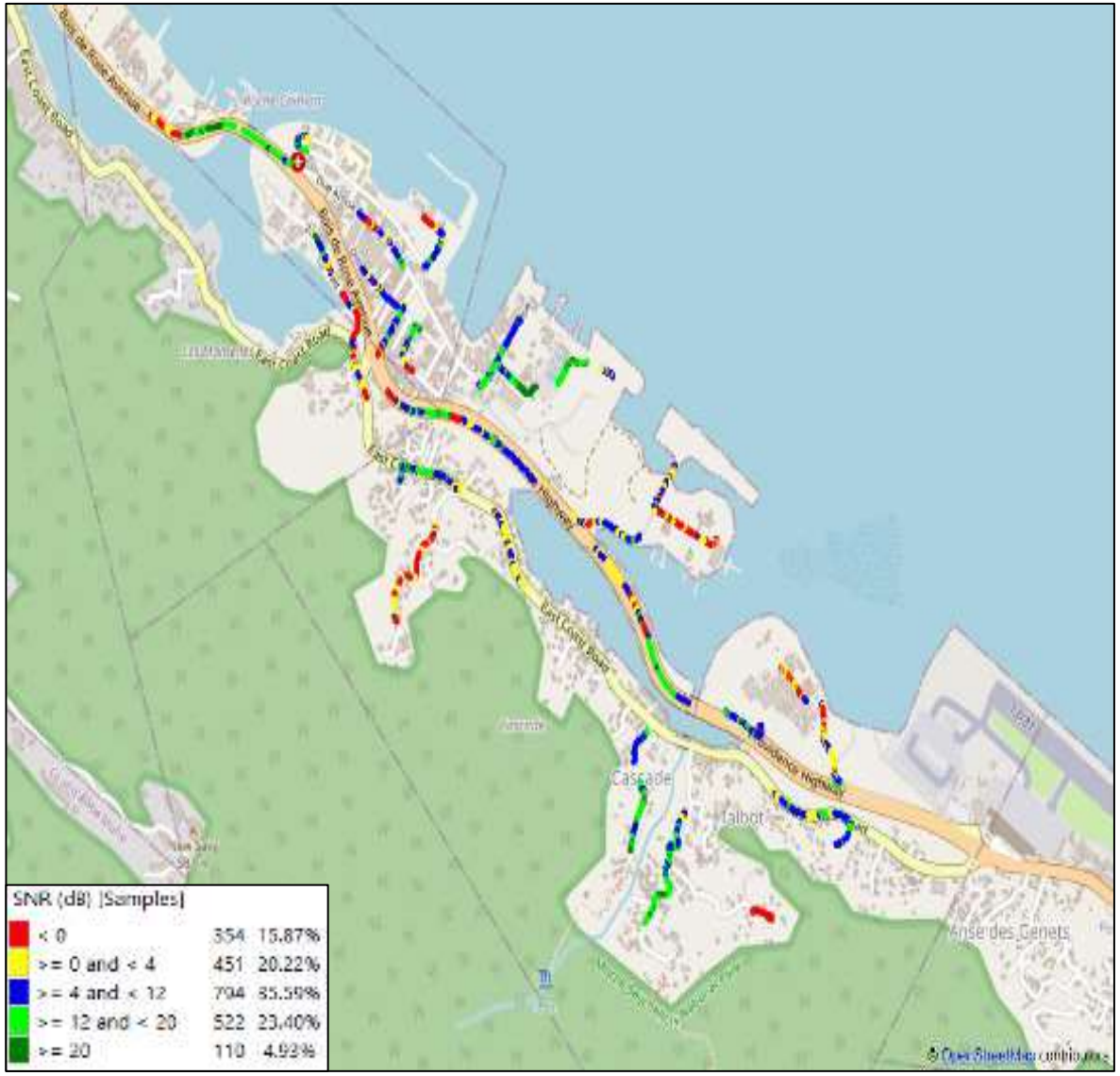


CWS LC MO

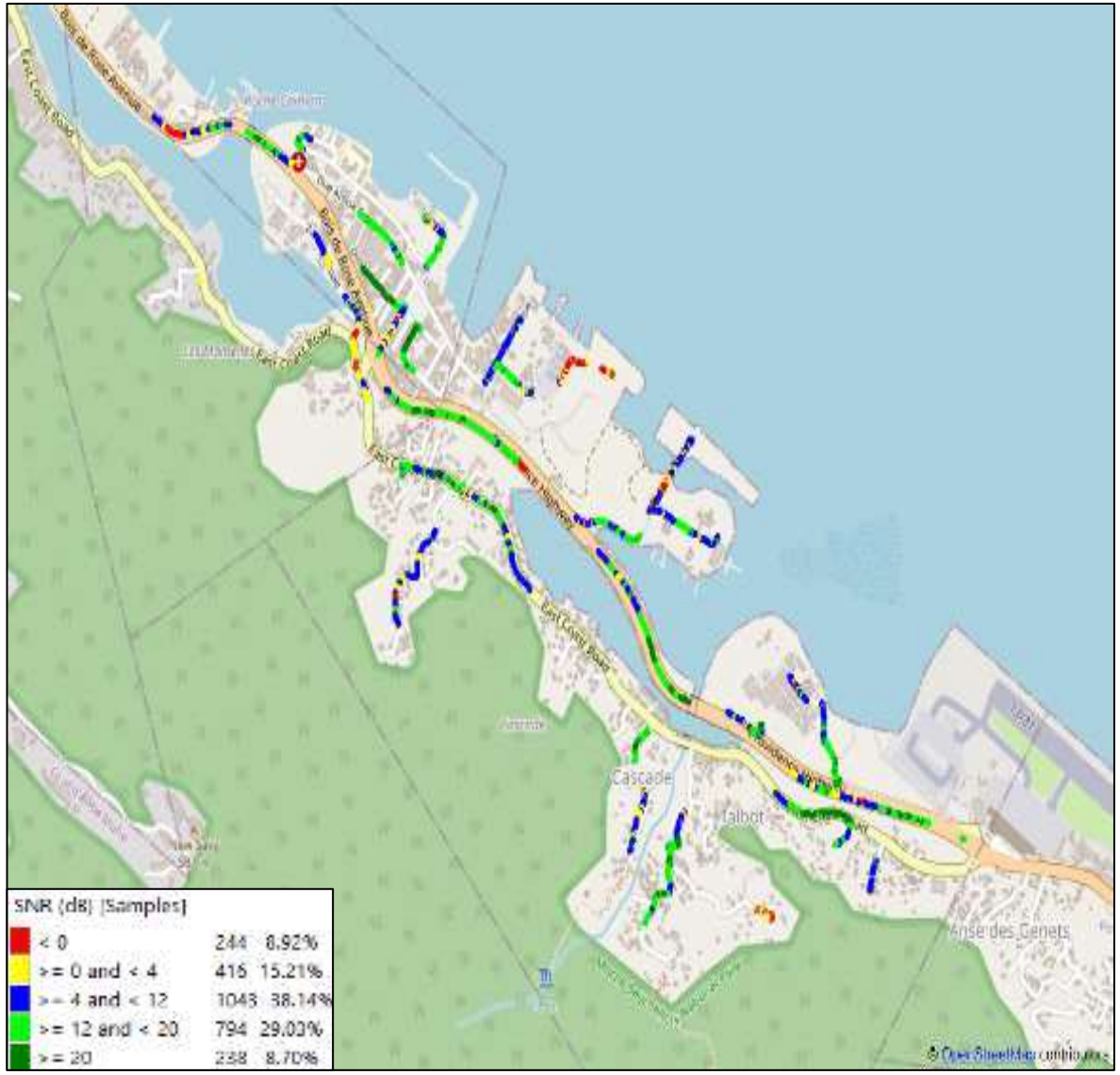


Phase-1 Long Call SINR PLOT

Airtel LC MO

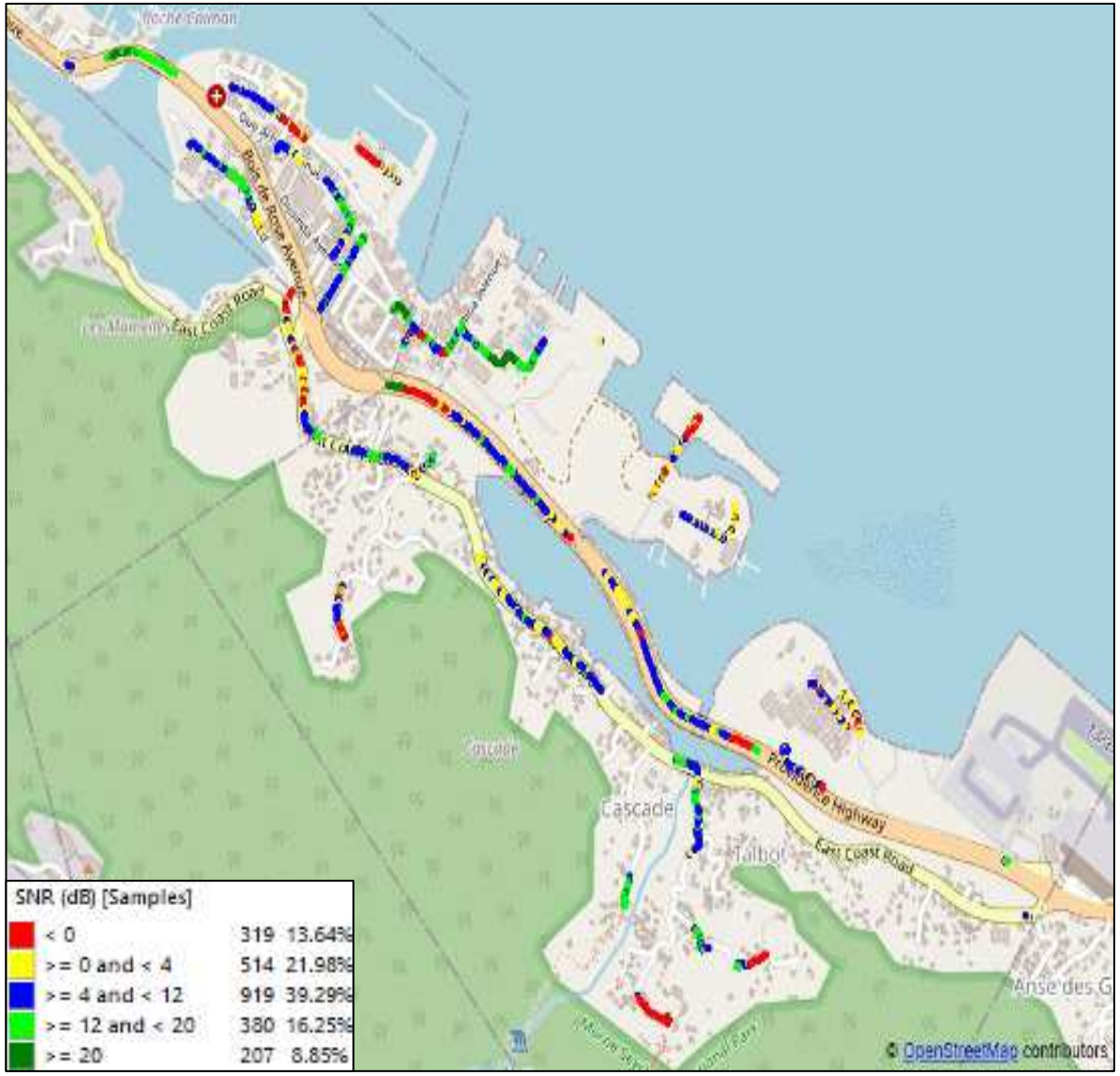


CWS LC MO

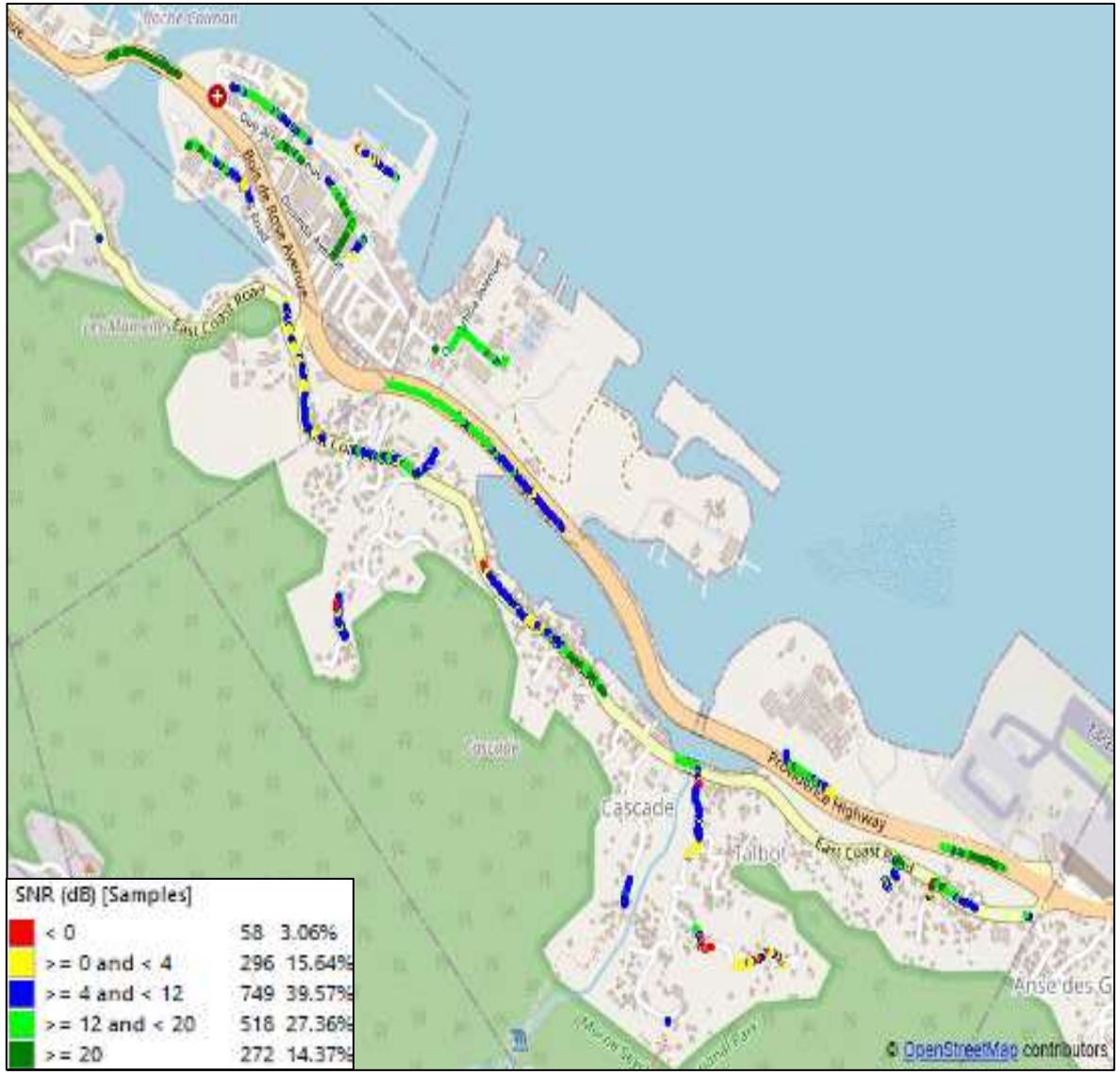


Phase-2 Long Call SINR PLOT

Airtel LC MO

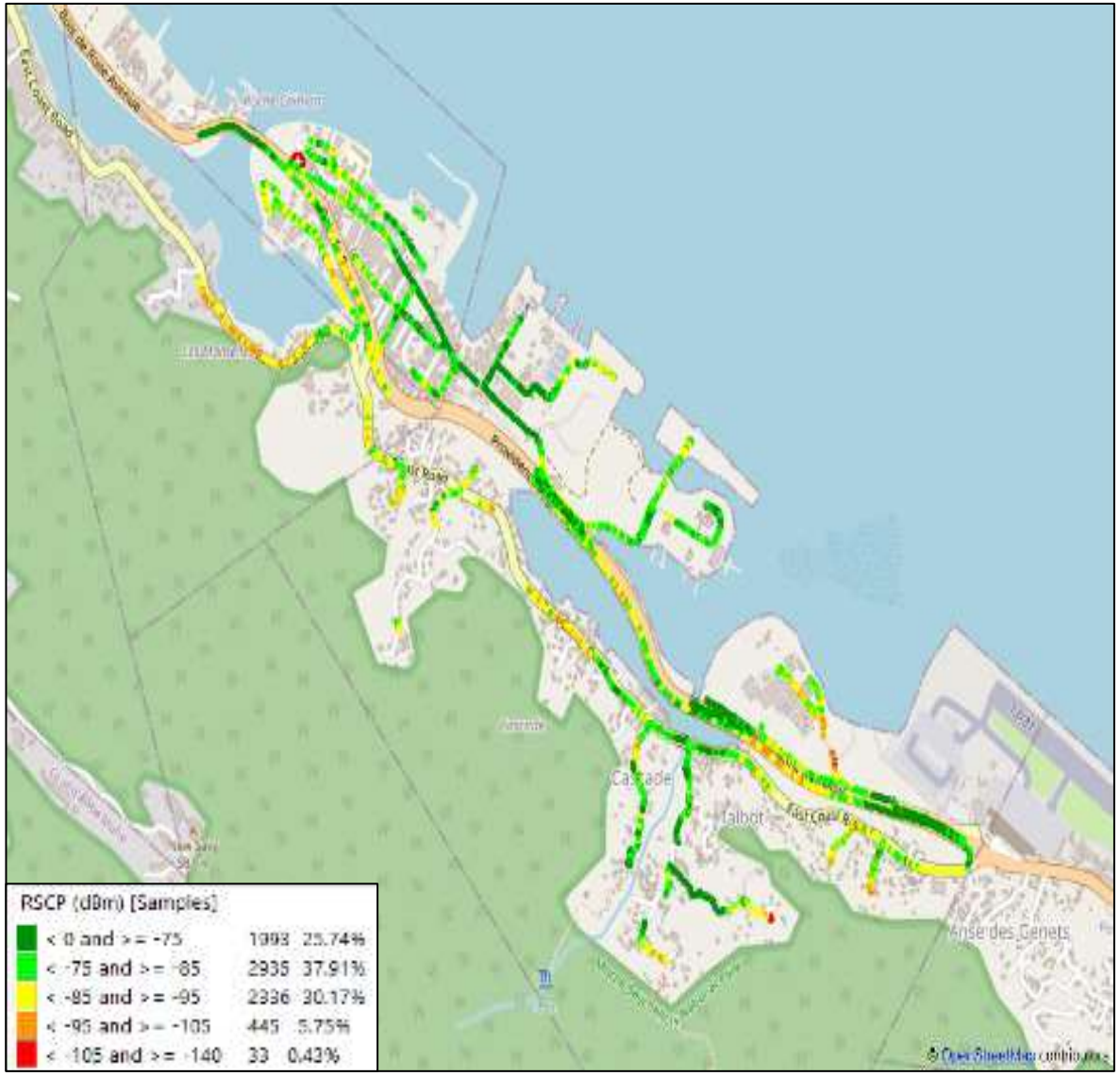


CWS LC MO



Phase-1 Long Call RSCP PLOT

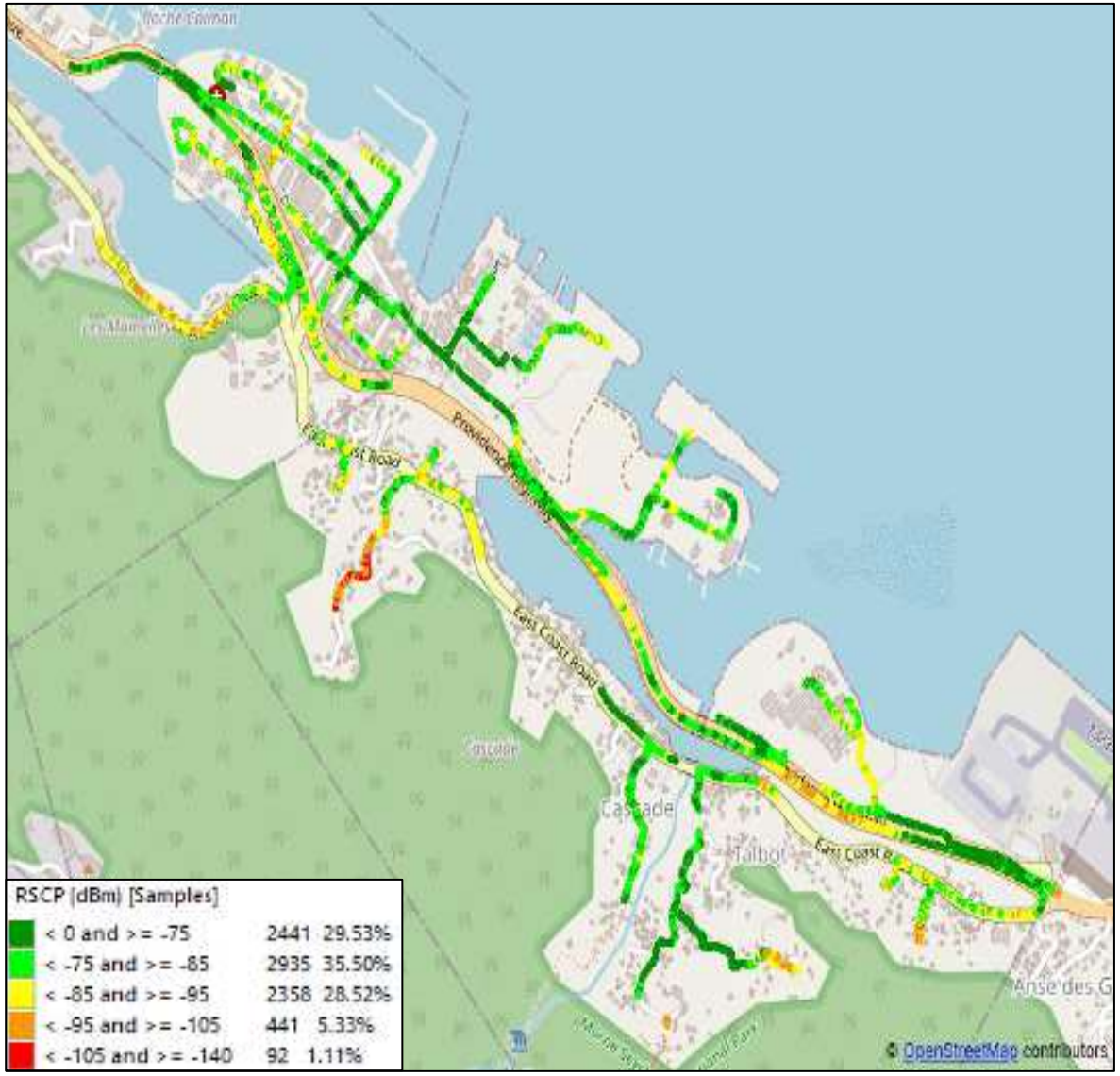
Airtel LC MO



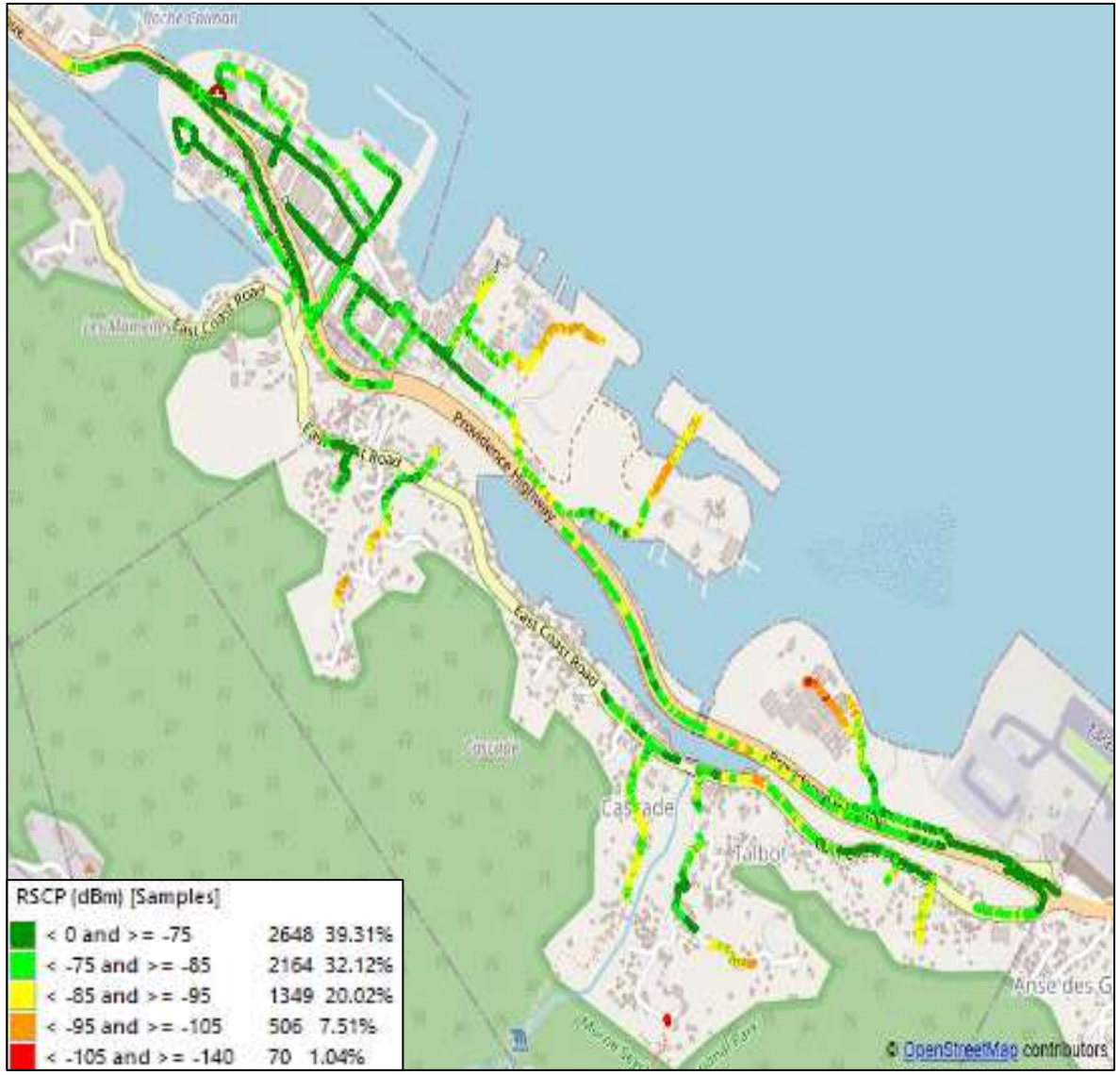
CWS LC MO

Phase-2 Long Call RSCP PLOT

Airtel LC MO



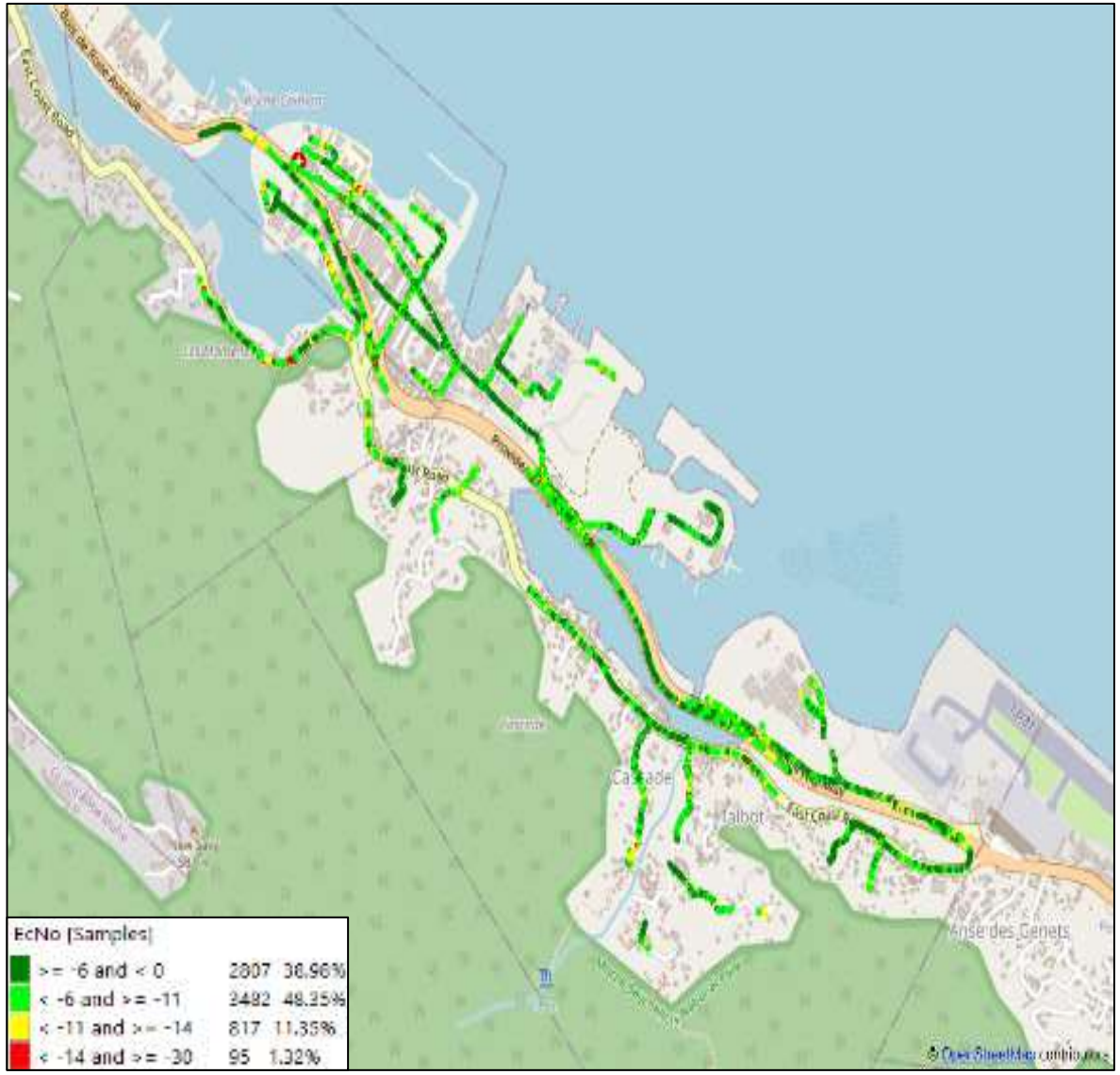
CWS LC MO



Phase-1 Long Call EC/NO PLOT

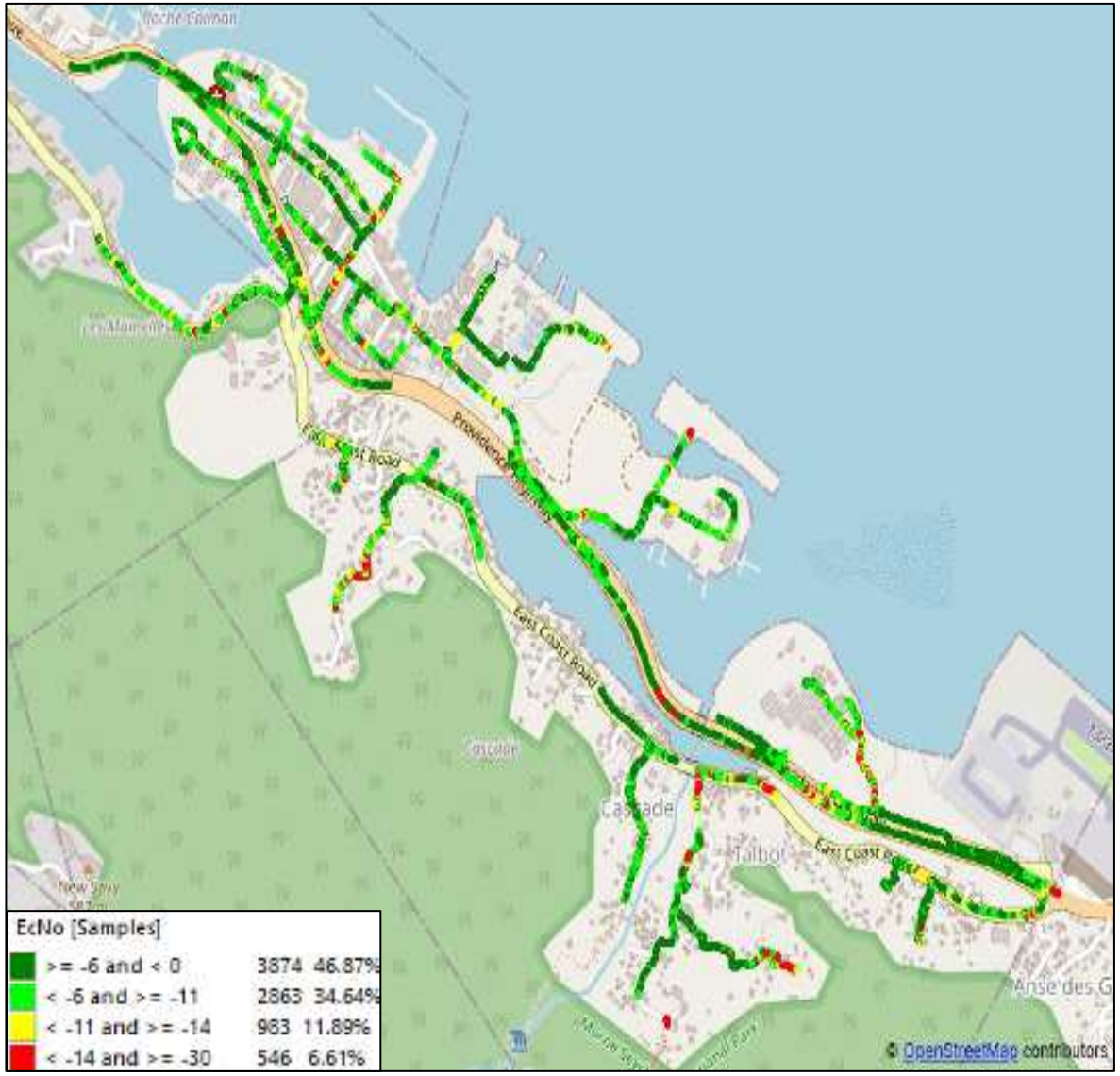
Airtel LC MO

CWS LC MO

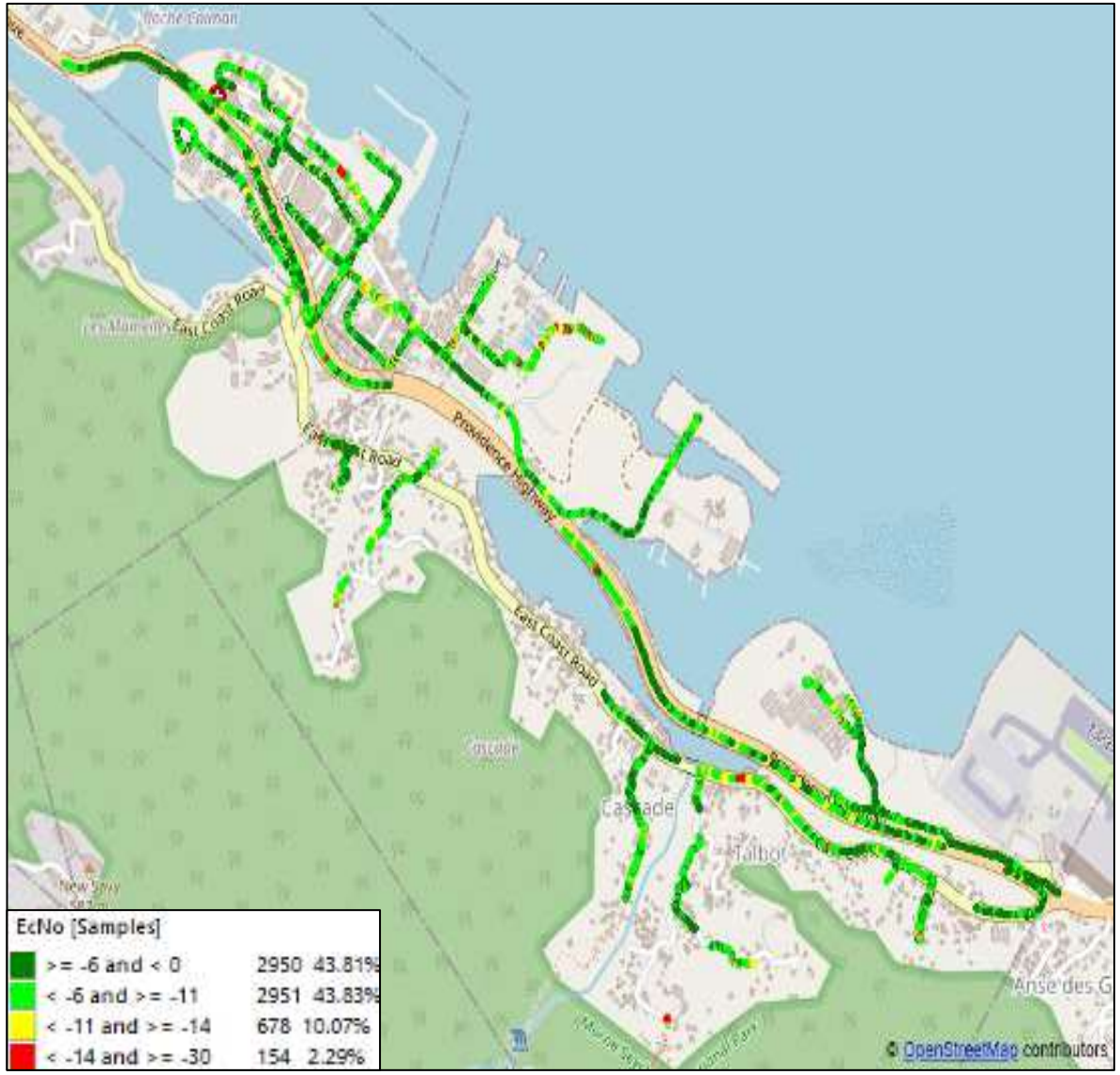


Phase-2 Long Call EC/NO PLOT

Airtel LC MO

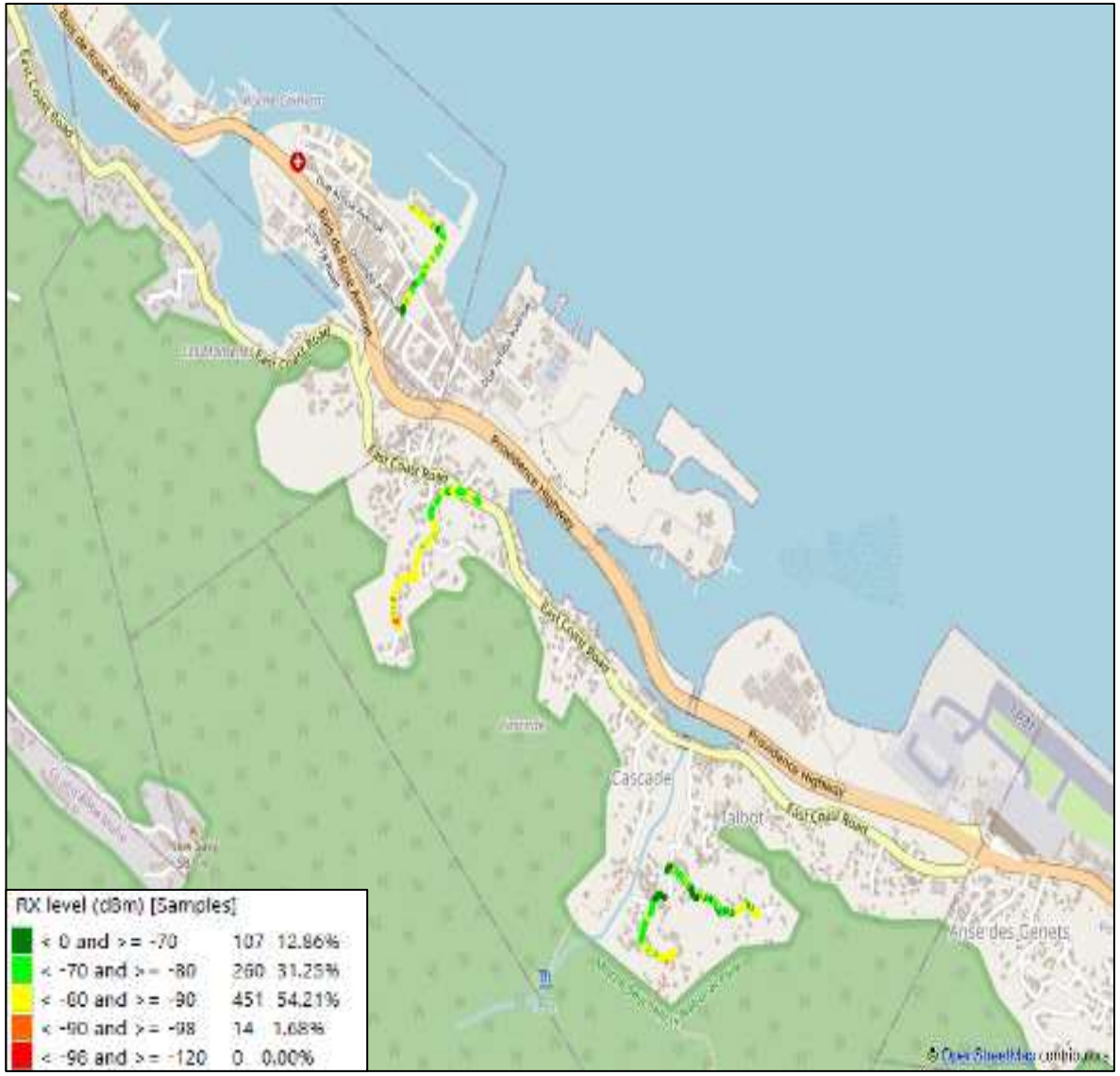


CWS LC MO

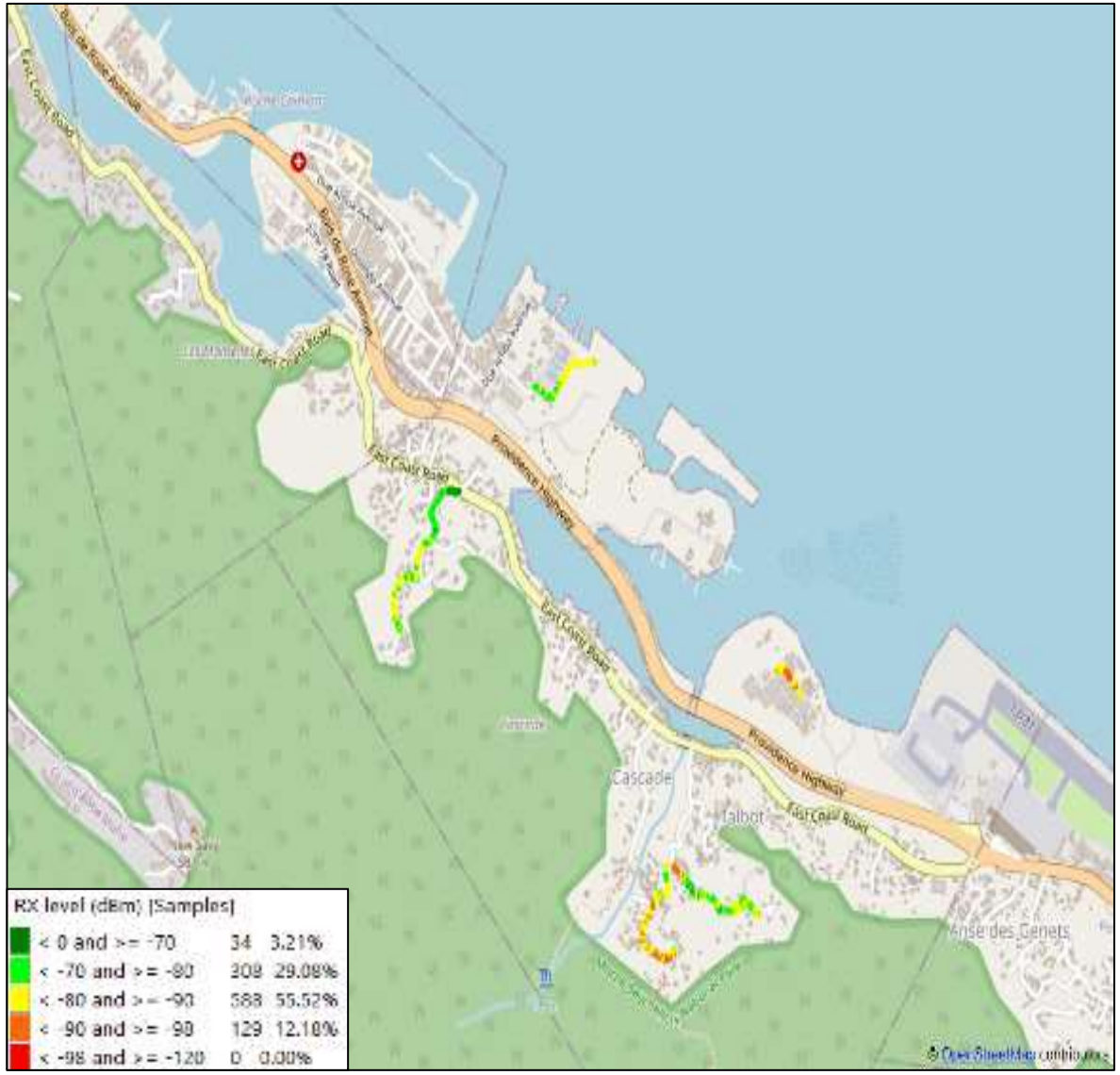


Phase-1 Long Call RX level sub PLOT

Airtel LC MO

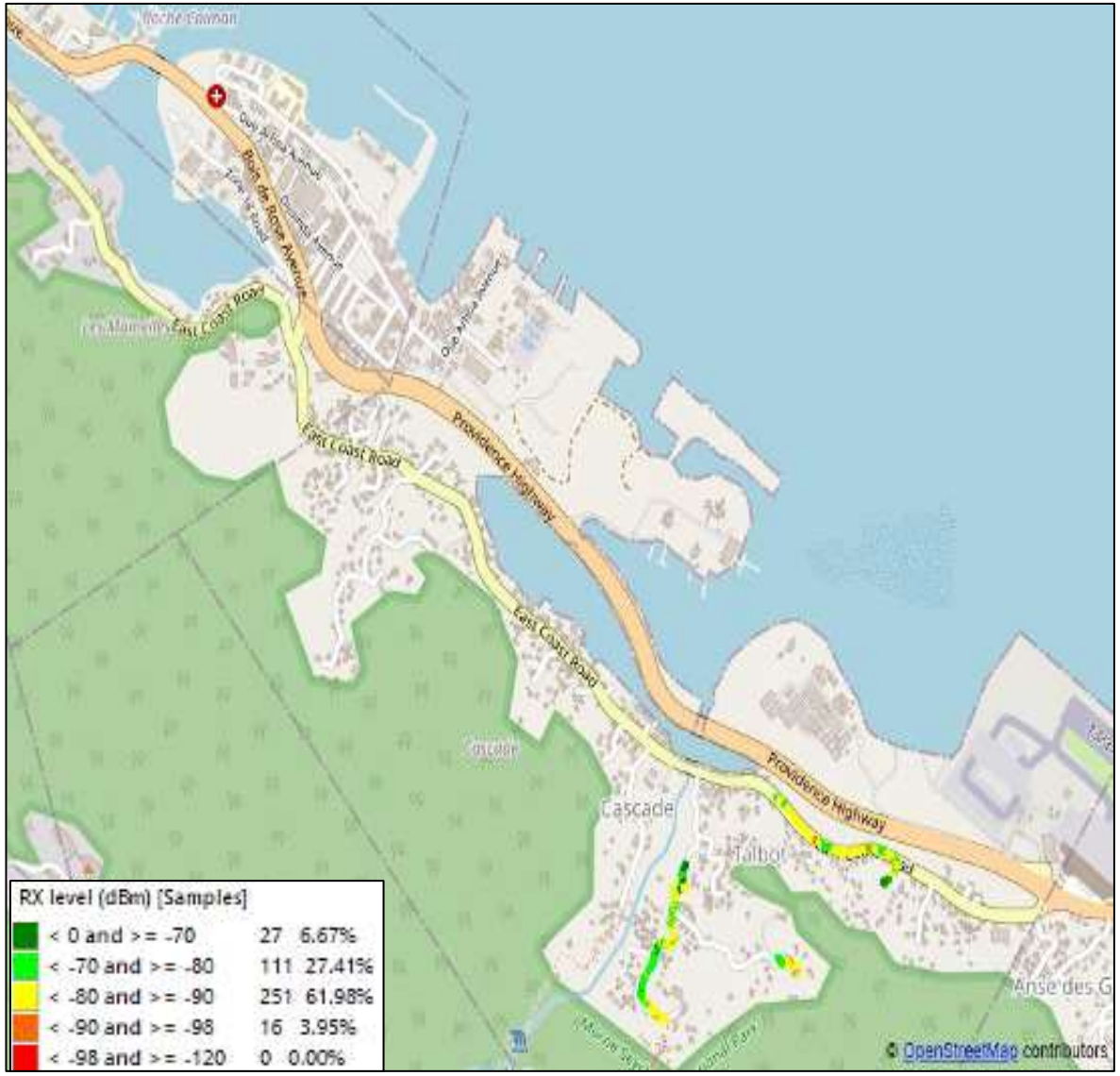


CWS LC MO

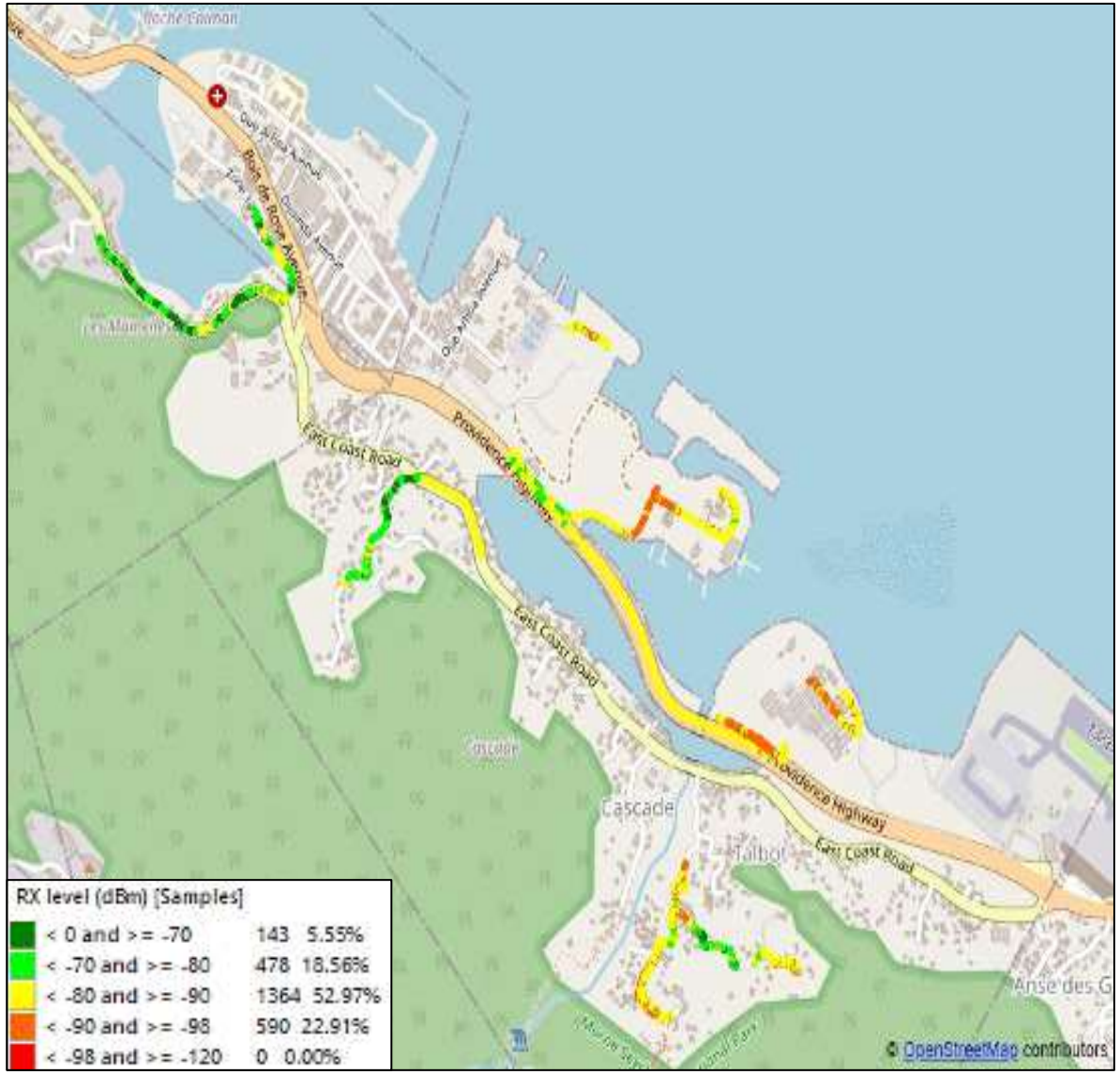


Phase-2 Long Call RX level sub PLOT

Airtel LC MO



CWS LC MO



Phase-1 Long Call RX quality sub PLOT

Airtel LC MO

CWS LC MO

Phase-2 Long Call RX quality sub PLOT

Airtel LC MO

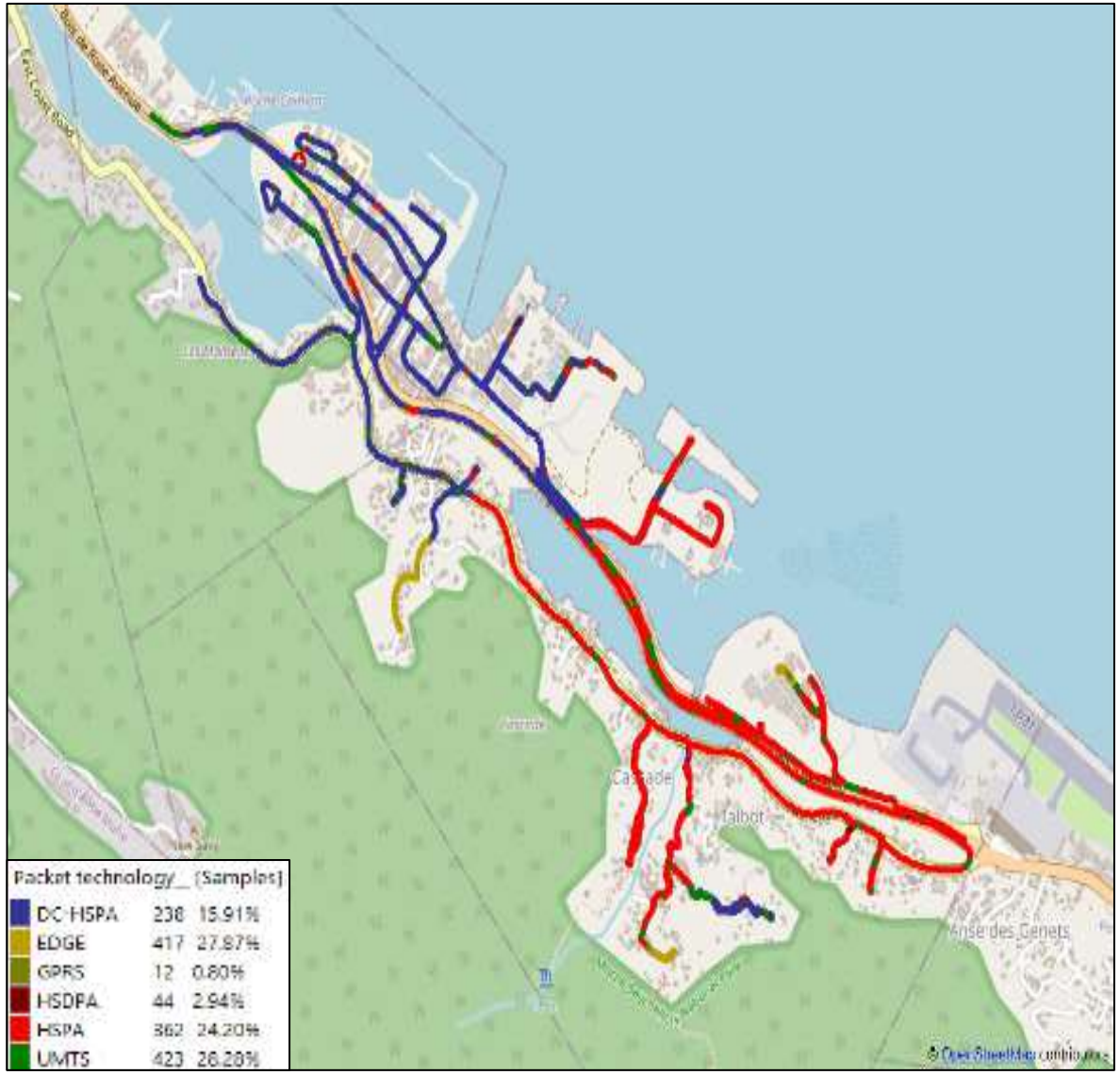
CWS LC MO

3G PREFERRED DATA DRIVE PLOTS

Phase-1 3G PREFERRED DATA TEST - TECHNOLOGY PLOT

Airtel Data 3G

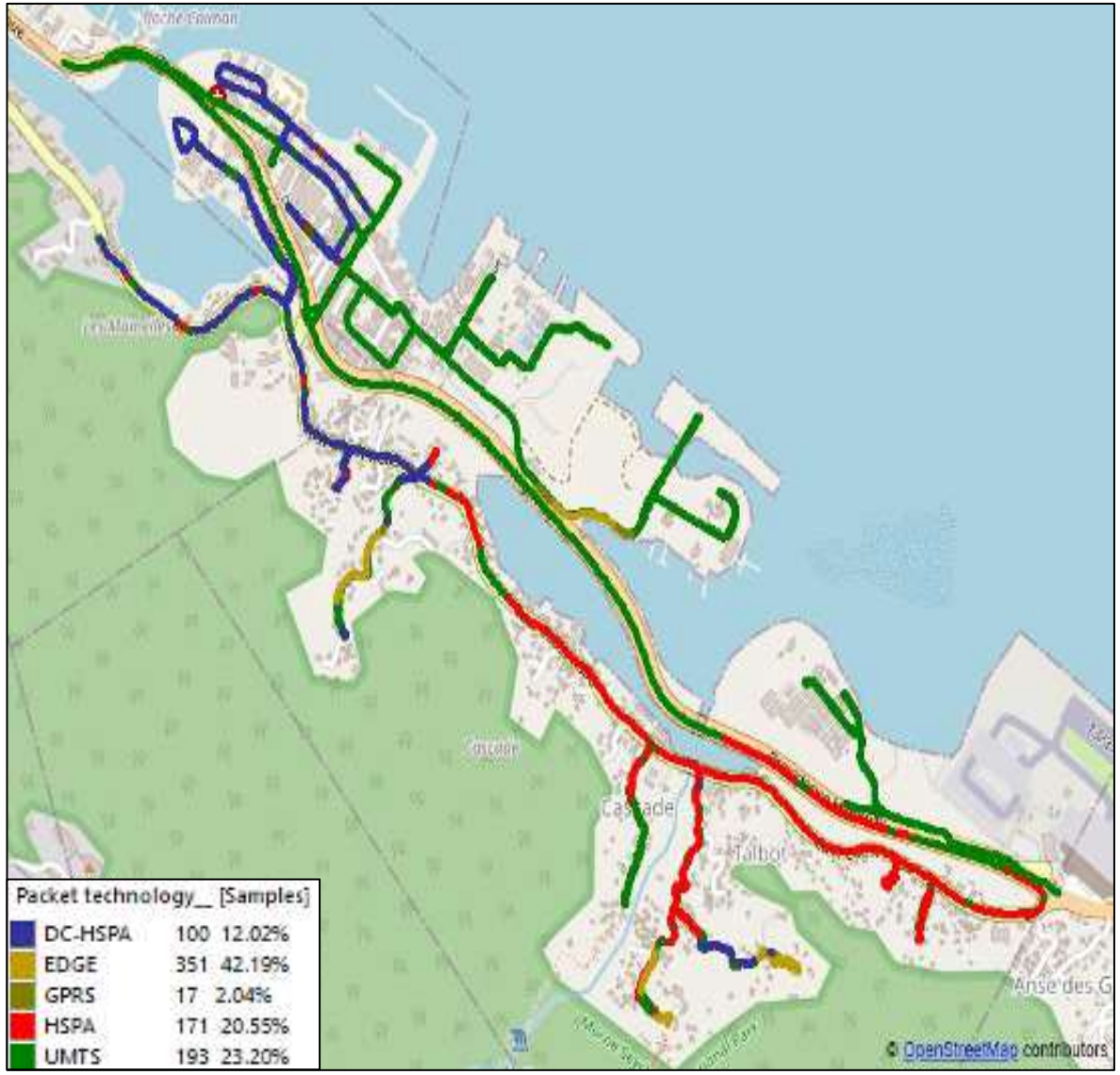
CWS Data 3G



Phase-2 3G PREFERRED DATA TEST - TECHNOLOGY PLOT

Airtel Data 3G

CWS Data 3G



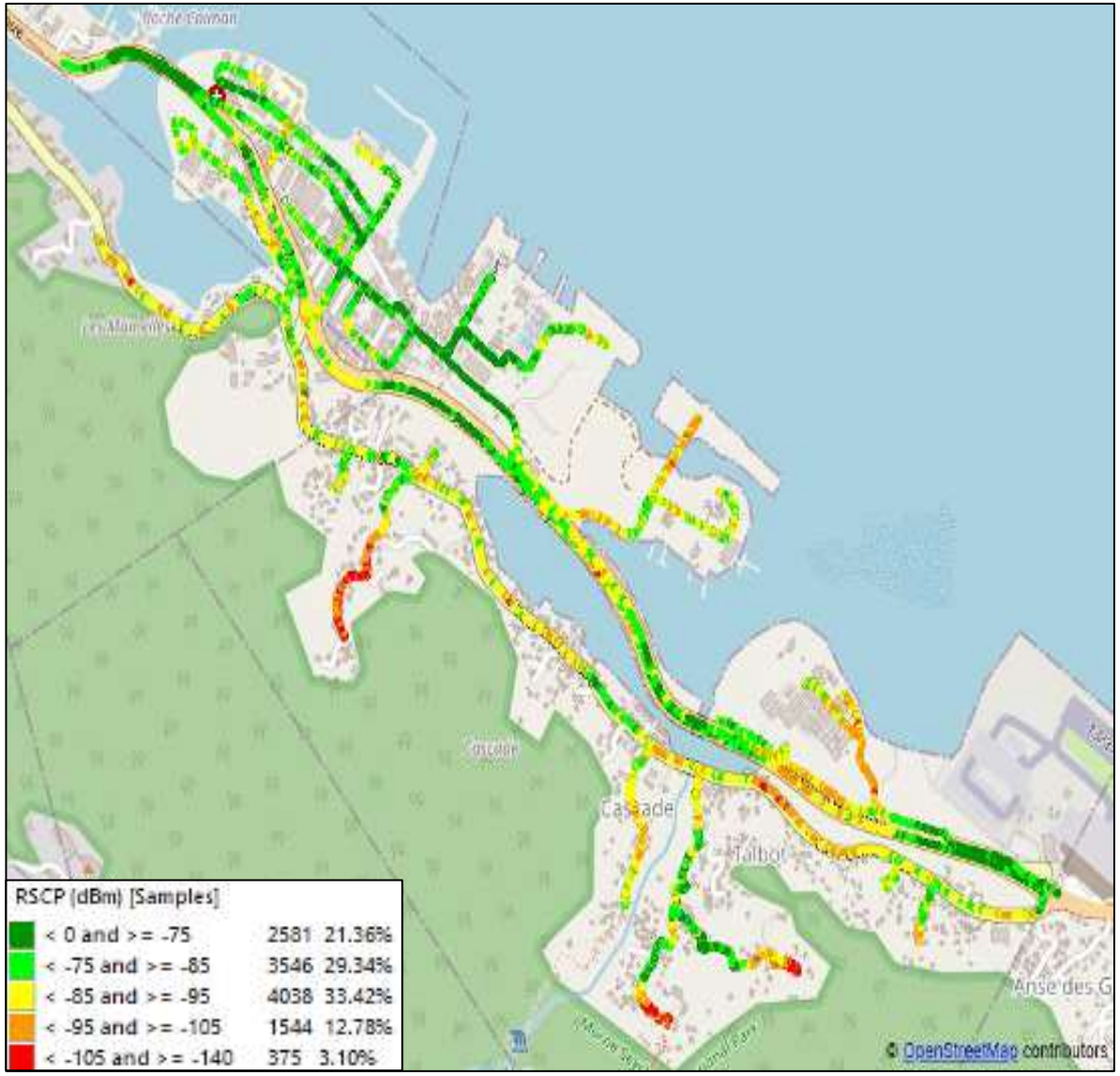
Phase-1 3G PREFERRED DATA TEST - RSCP PLOT

Airtel Data 3G

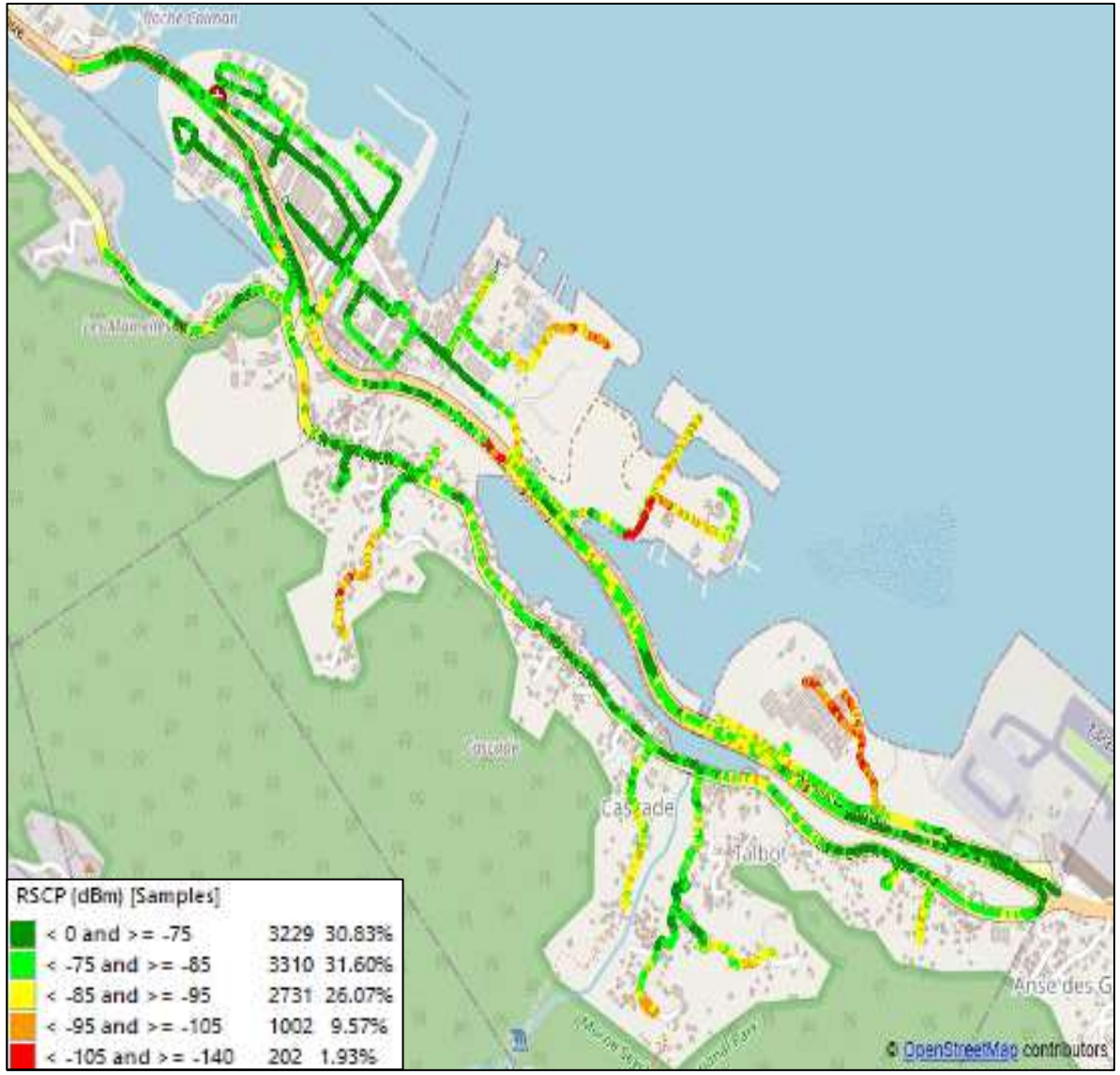
CWS Data 3G

Phase-2 3G PREFERRED DATA TEST - RSCP PLOT

Airtel Data 3G



CWS Data 3G



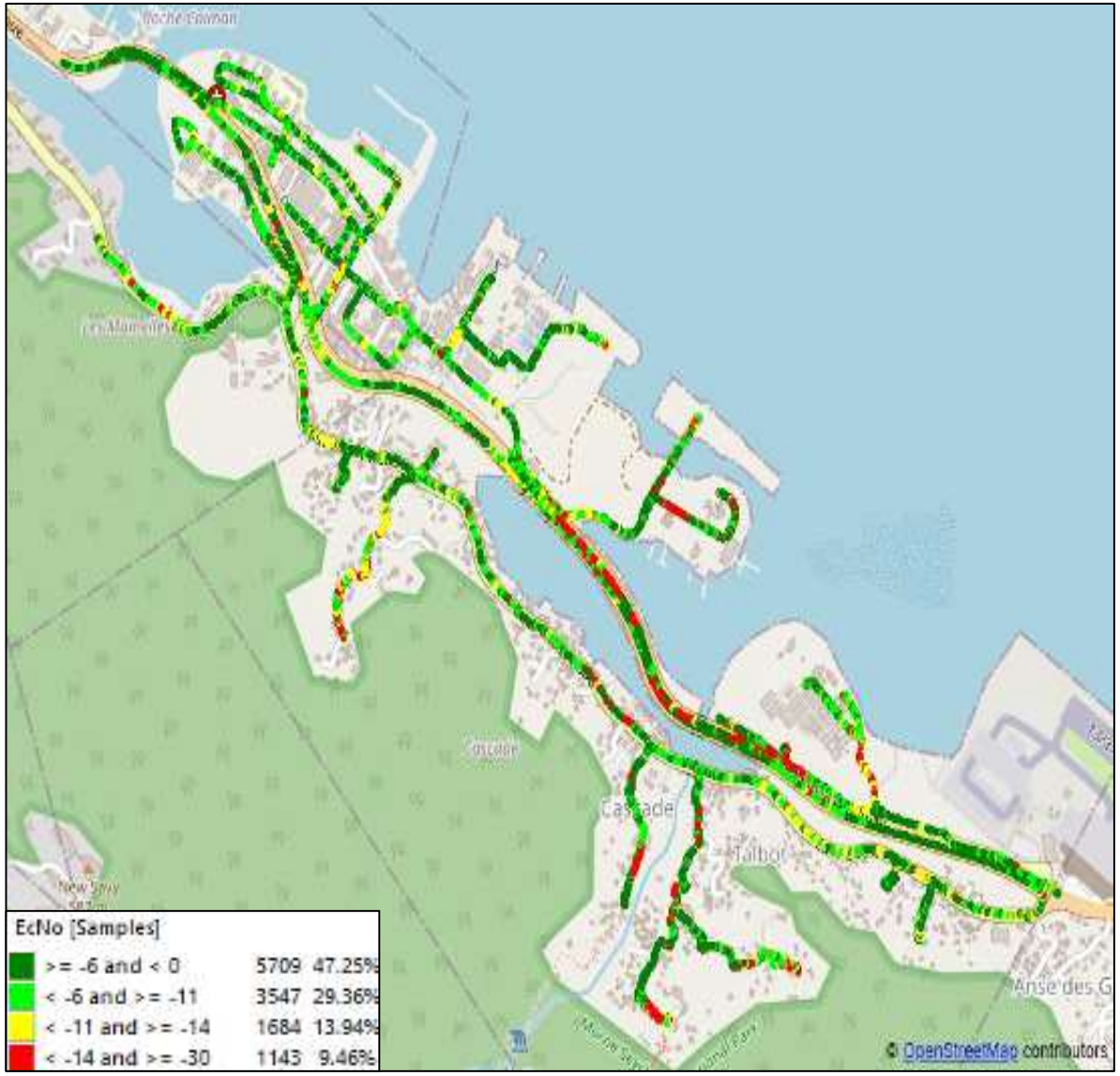
Phase-1 3G PREFERRED DATA TEST - EC/NO PLOT

Airtel Data 3G

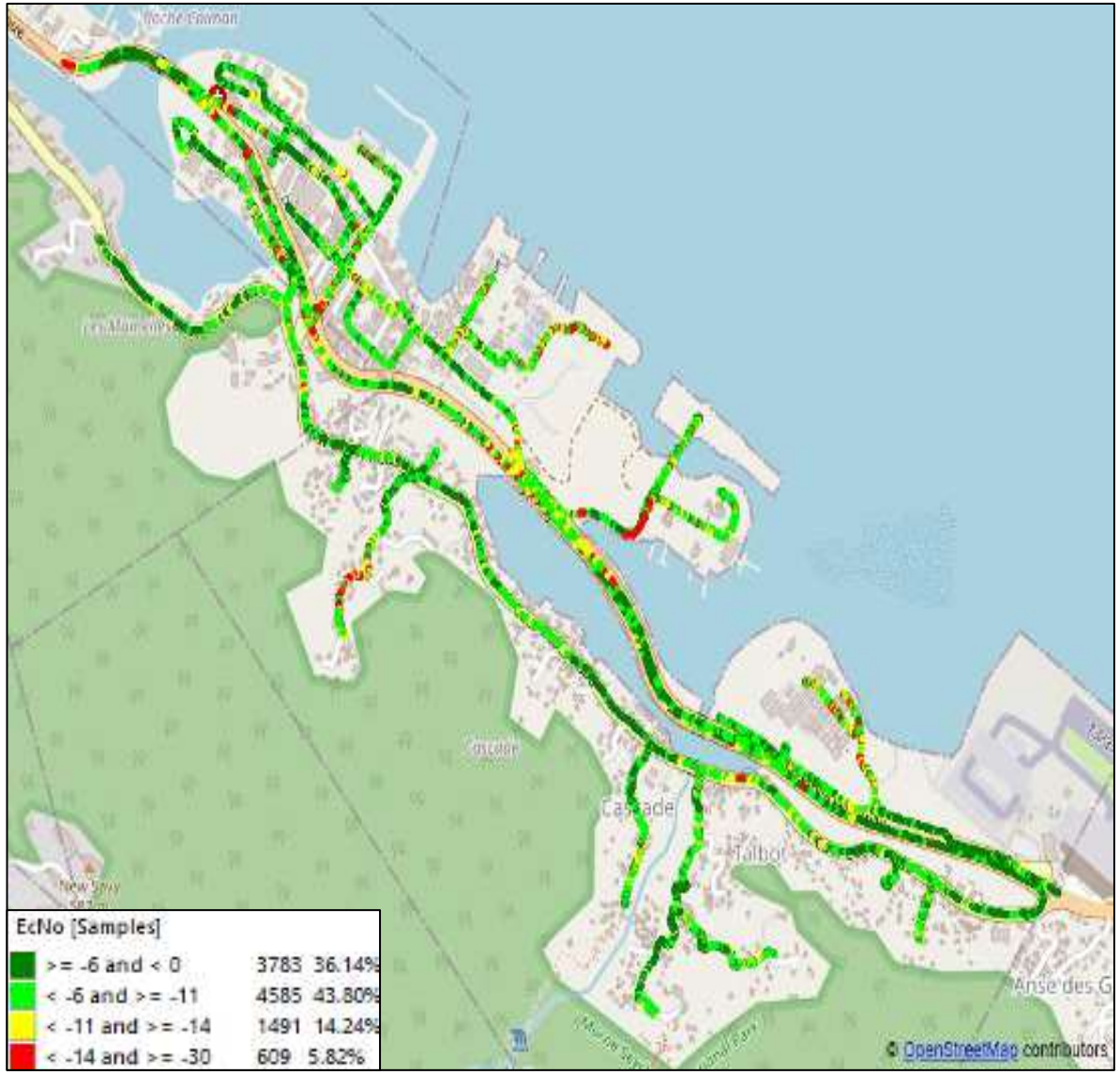
CWS Data 3G

Phase-2 3G PREFERRED DATA TEST - EC/NO PLOT

Airtel Data 3G



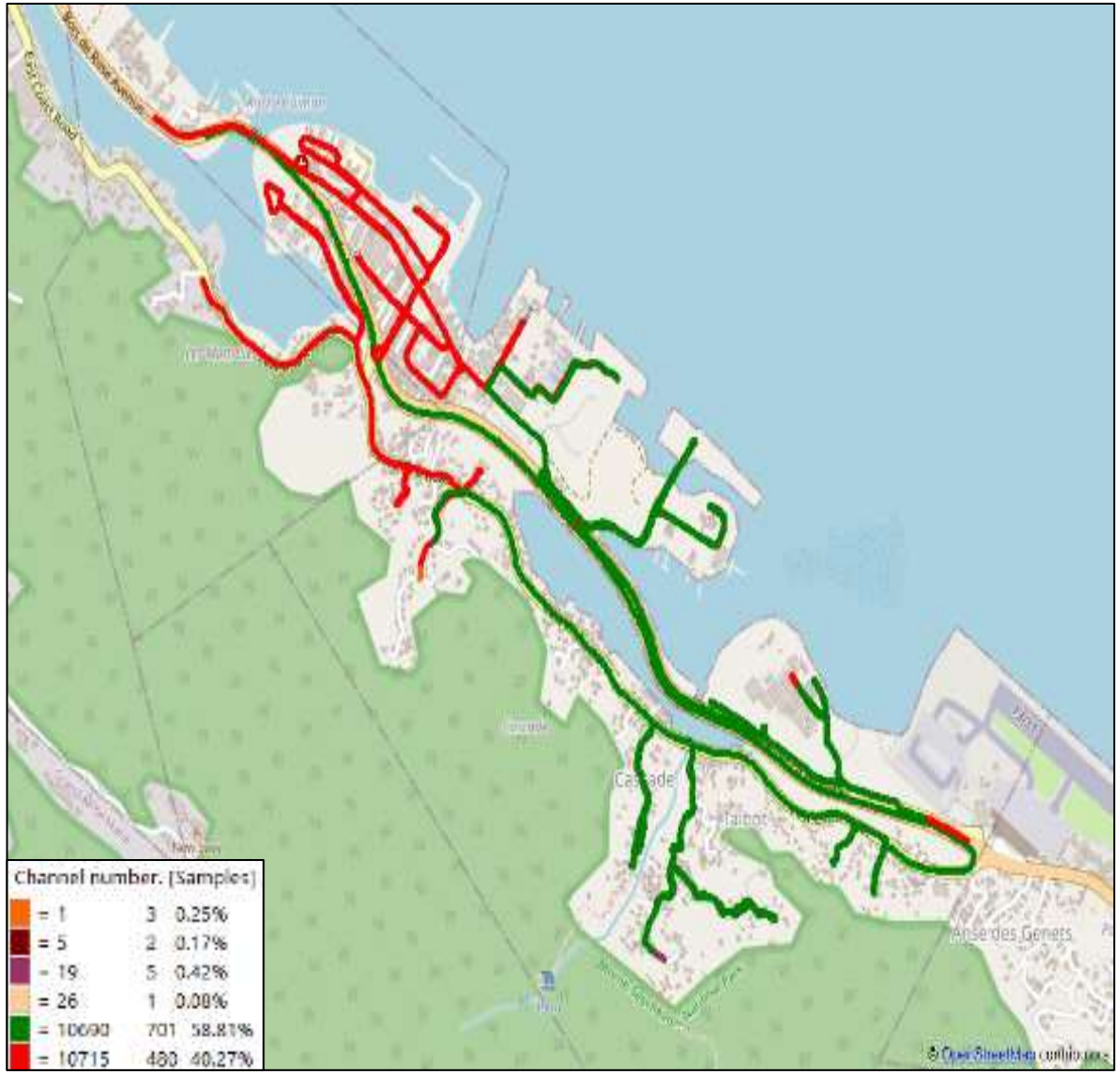
CWS Data 3G



Phase-1 3G PREFERRED DATA TEST - UARFCN PLOT

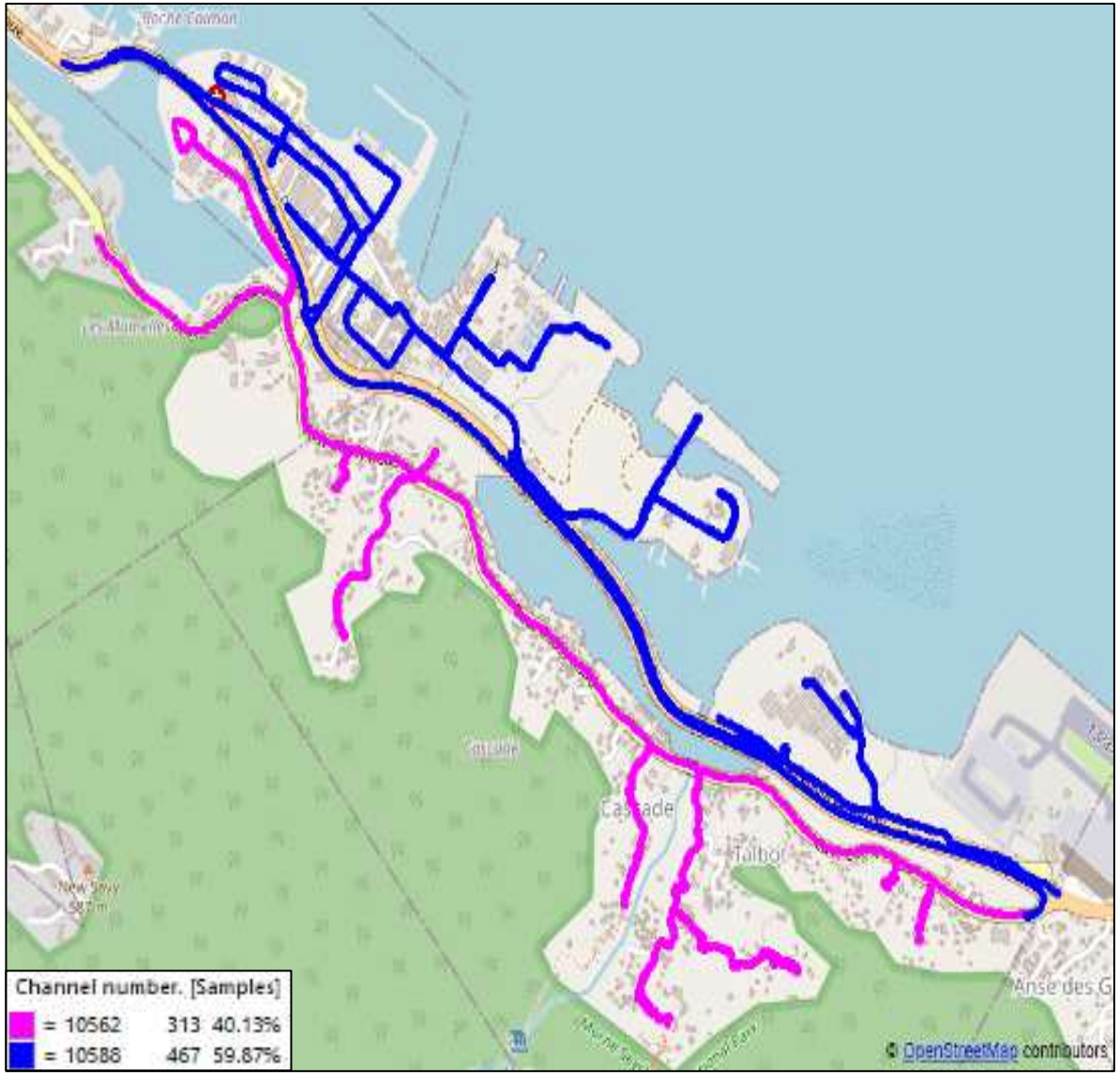
Airtel Data 3G

CWS Data 3G

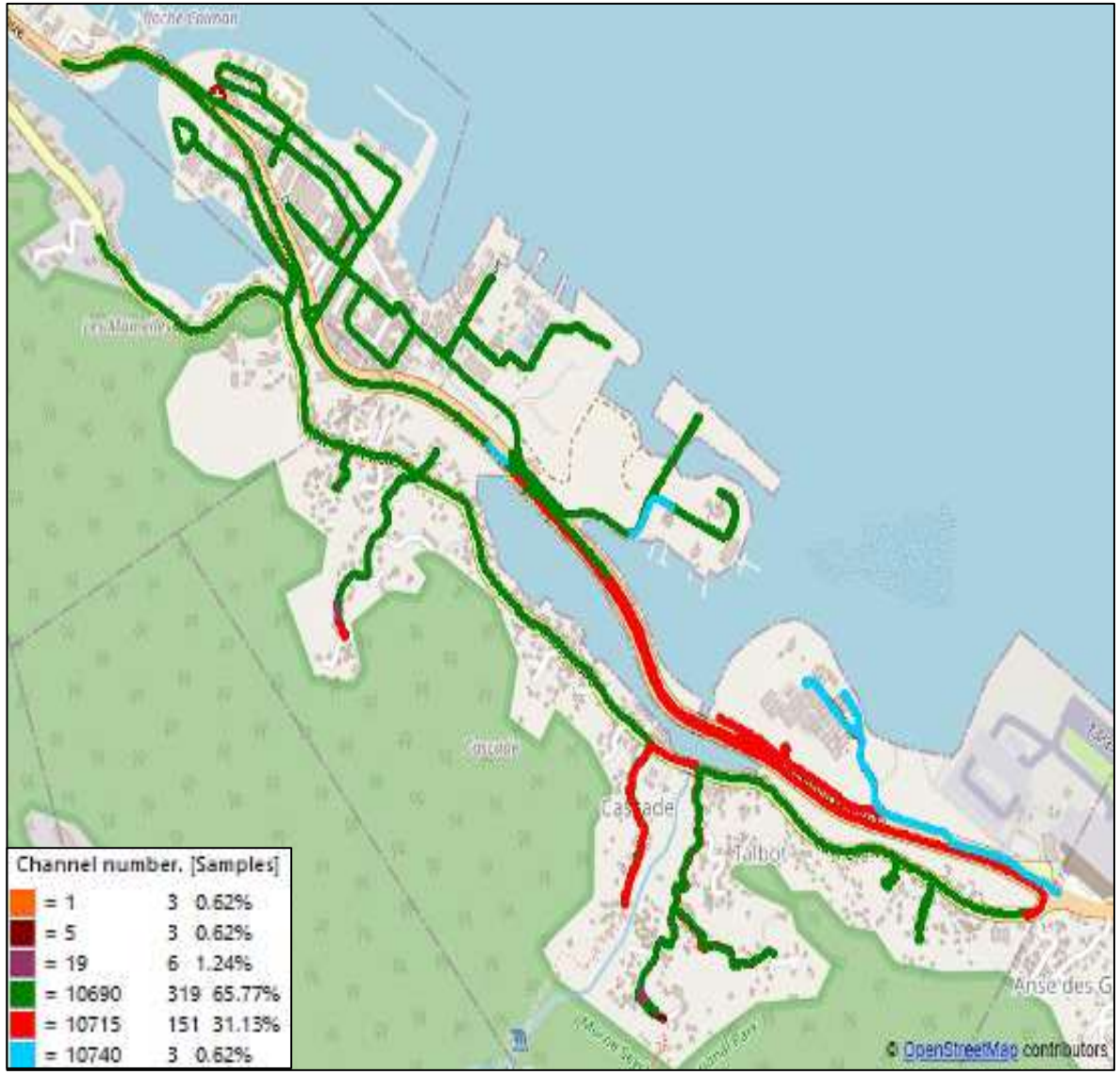


Phase-2 3G PREFERRED DATA TEST - UARFCN PLOT

Airtel Data 3G



CWS Data 3G



4G PREFERRED
DATA DRIVE PLOTS

Phase-1 4G PREFERRED DATA TEST - TECHNOLOGY PLOT

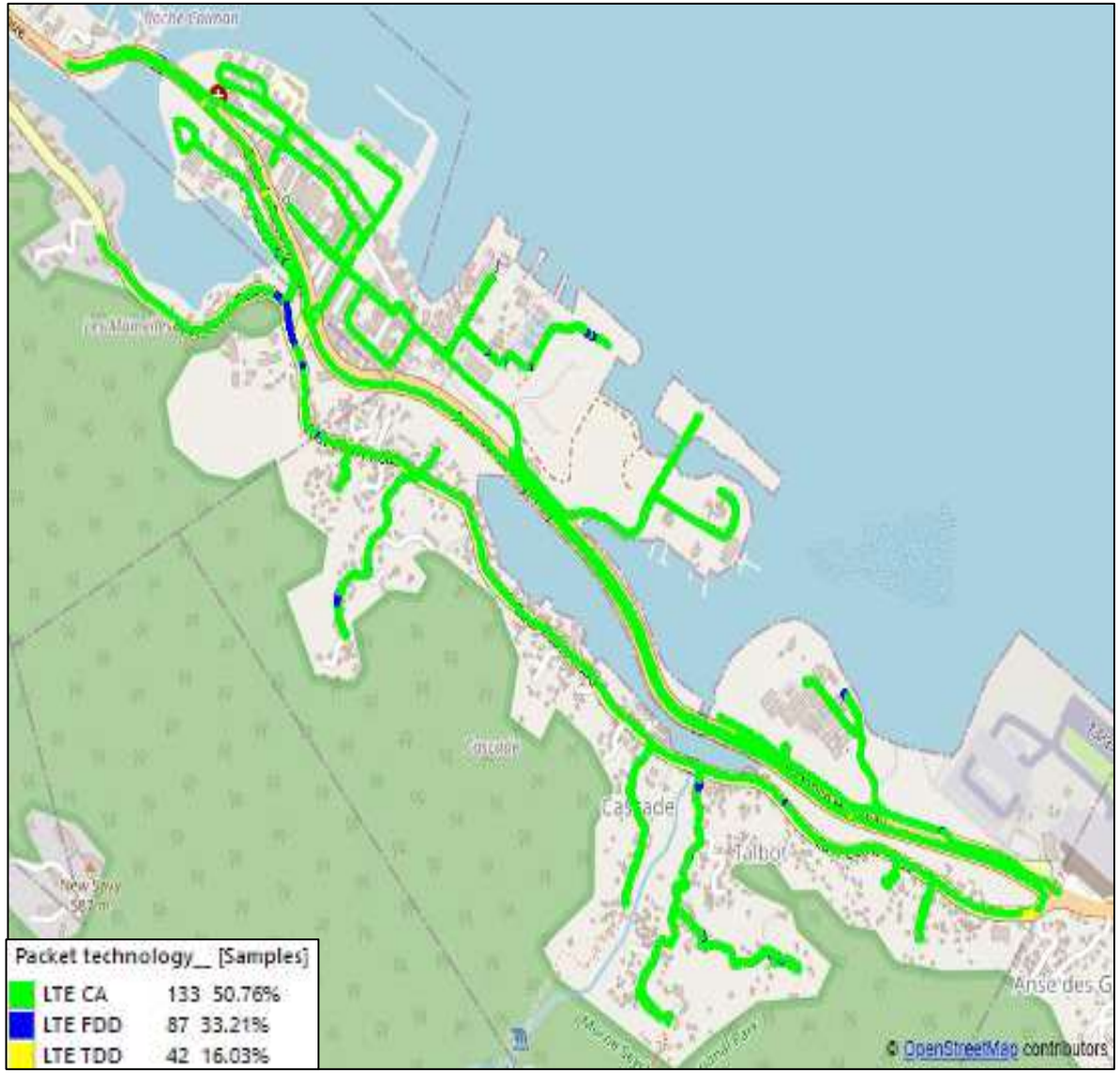
Airtel Data 4G

CWS Data 4G

Phase-2 4G PREFERRED DATA TEST - TECHNOLOGY PLOT

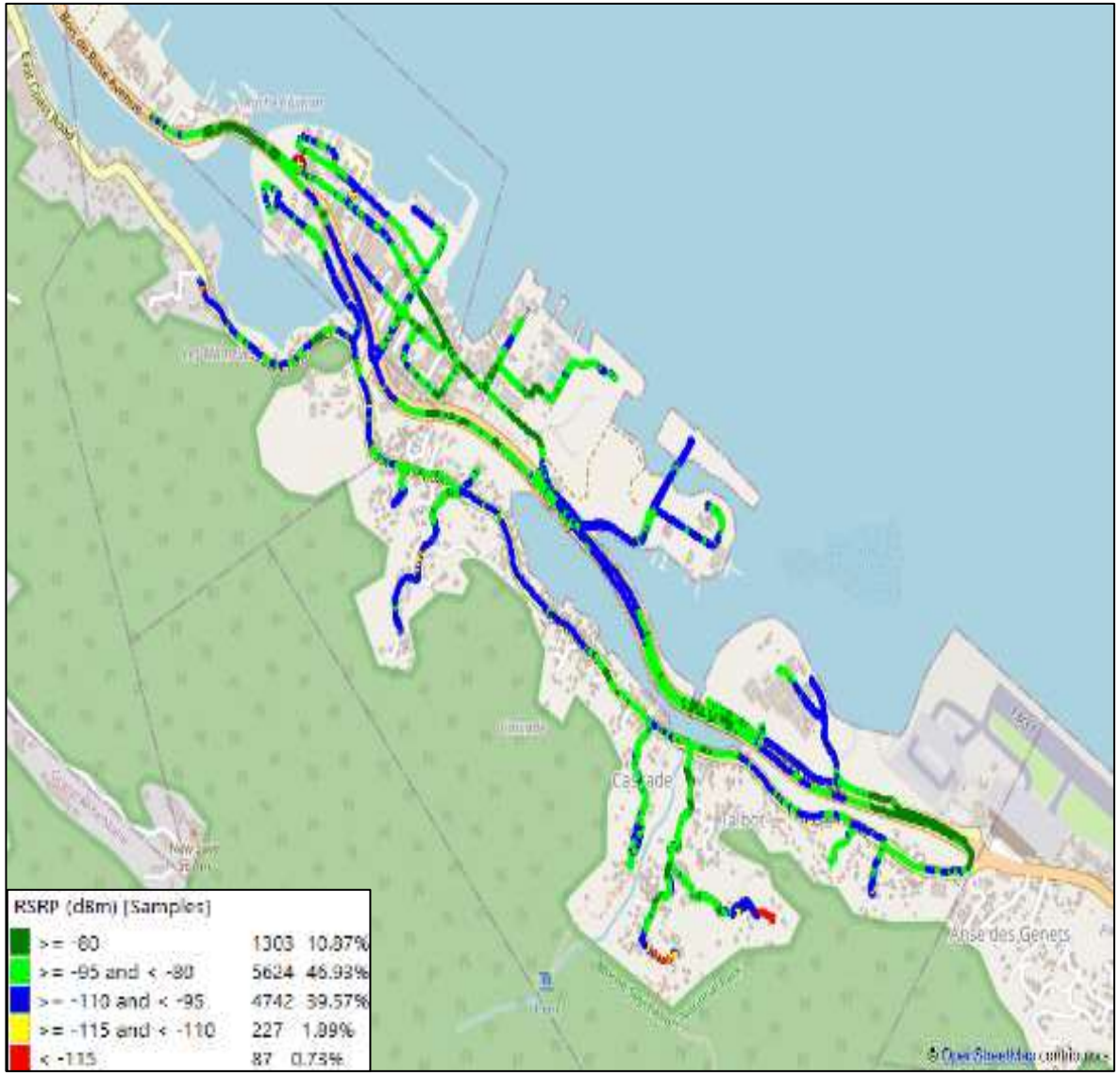
Airtel Data 4G

CWS Data 4G

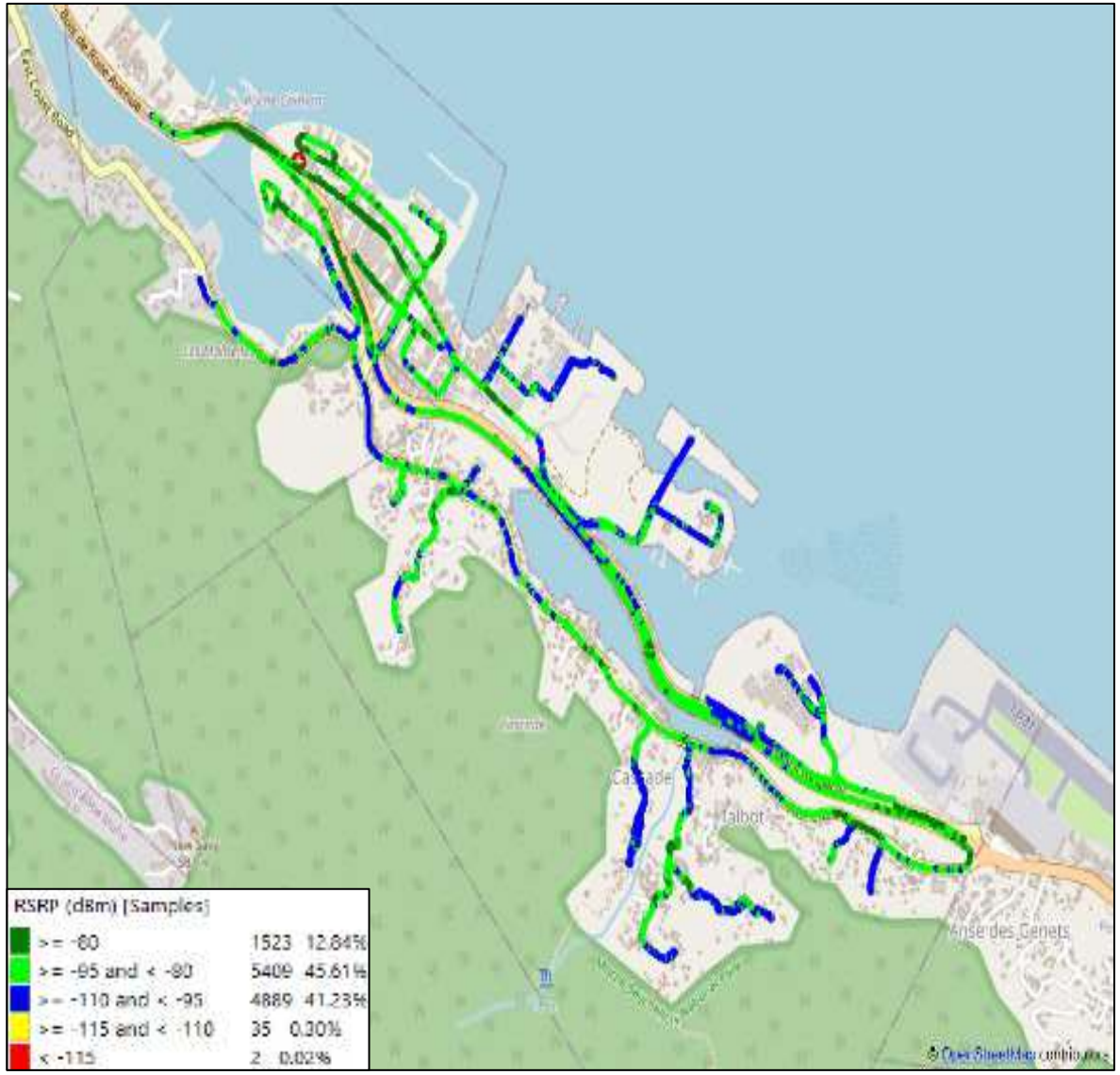


Phase-1 4G PREFERRED DATA TEST - RSRP PLOT

Airtel Data 4G

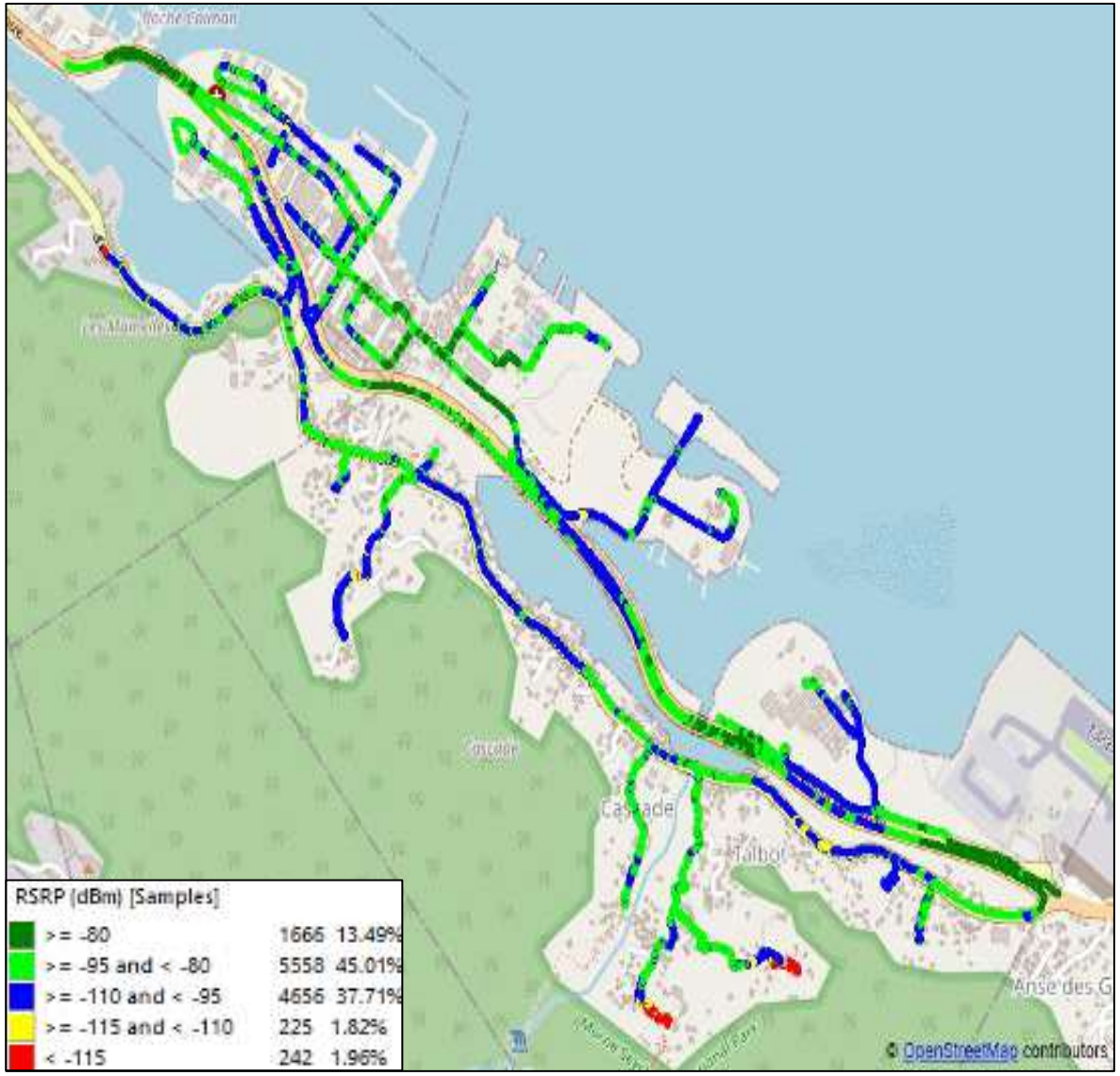


CWS Data 4G

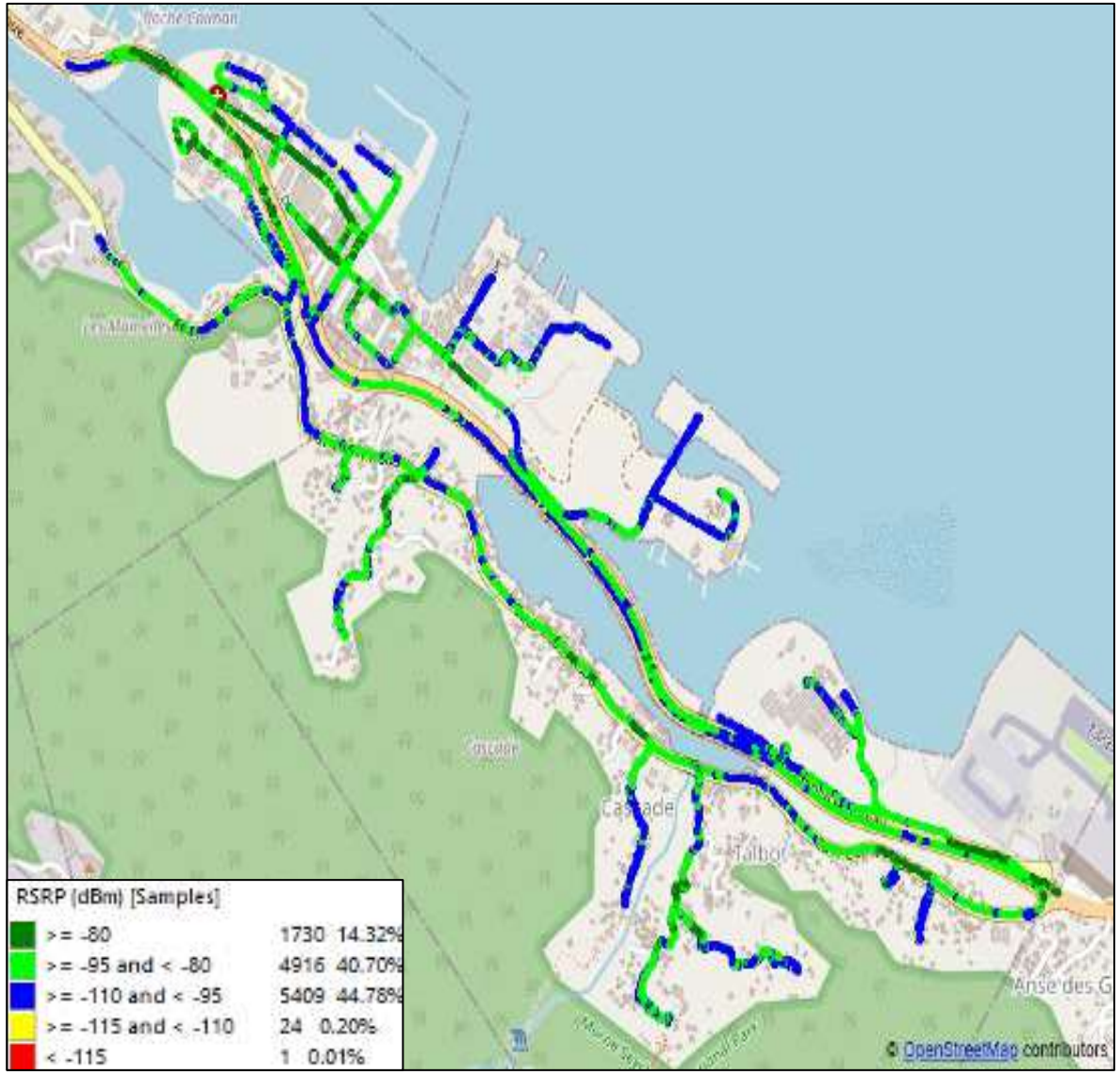


Phase-2 4G PREFERRED DATA TEST - RSRP PLOT

Airtel Data 4G

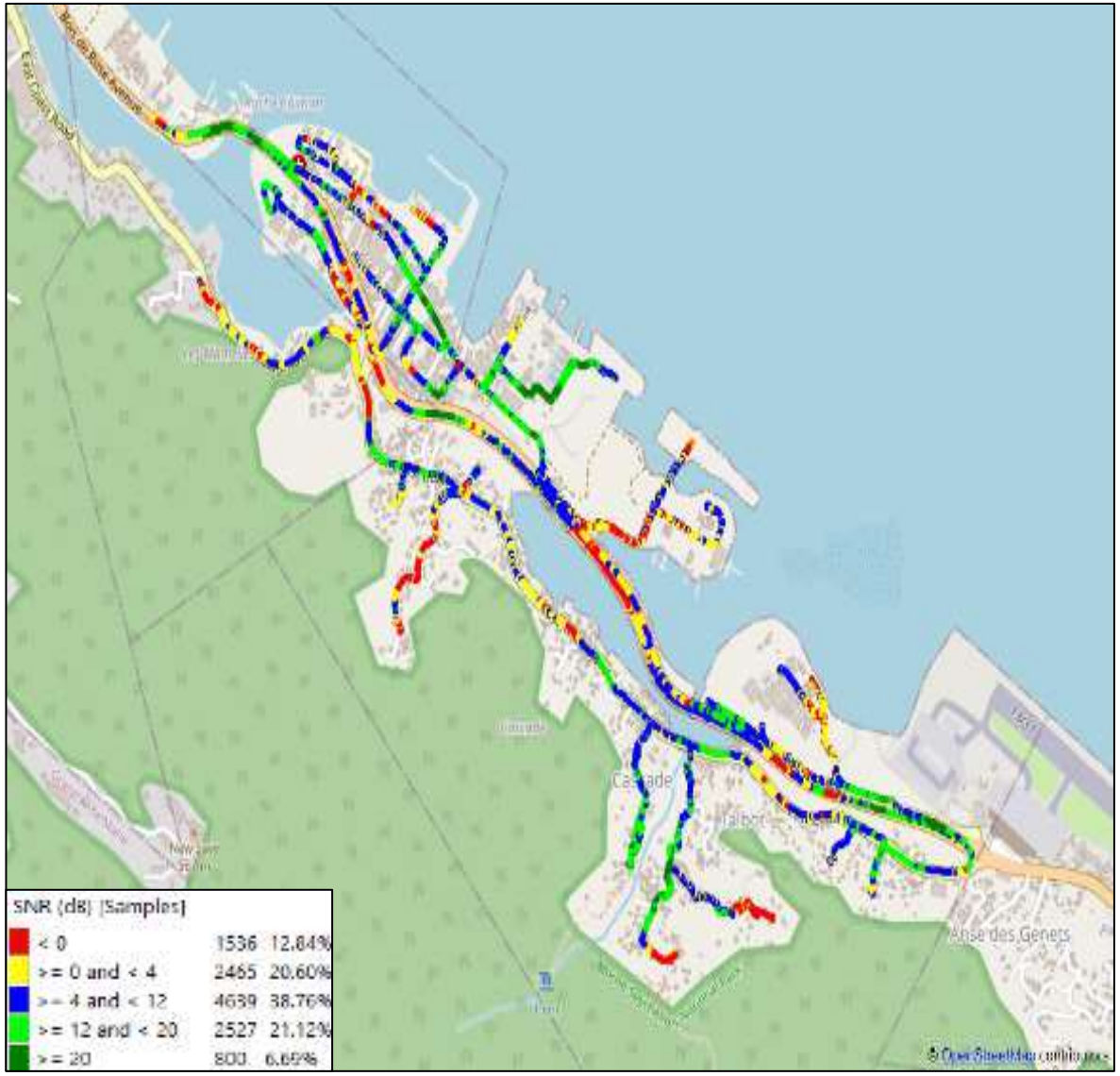


CWS Data 4G

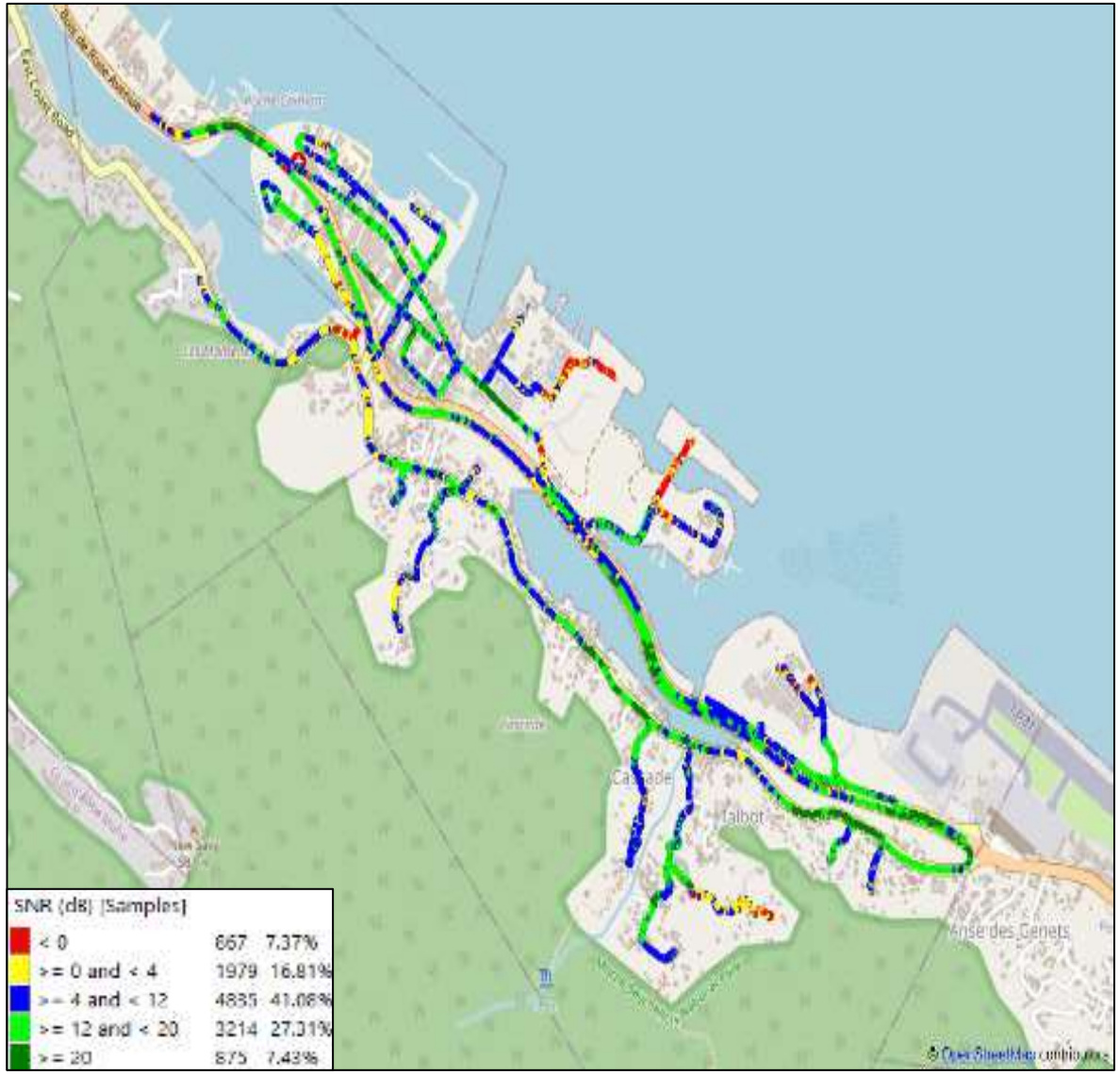


Phase-1 4G PREFERRED DATA TEST - SINR PLOT

Airtel Data 4G

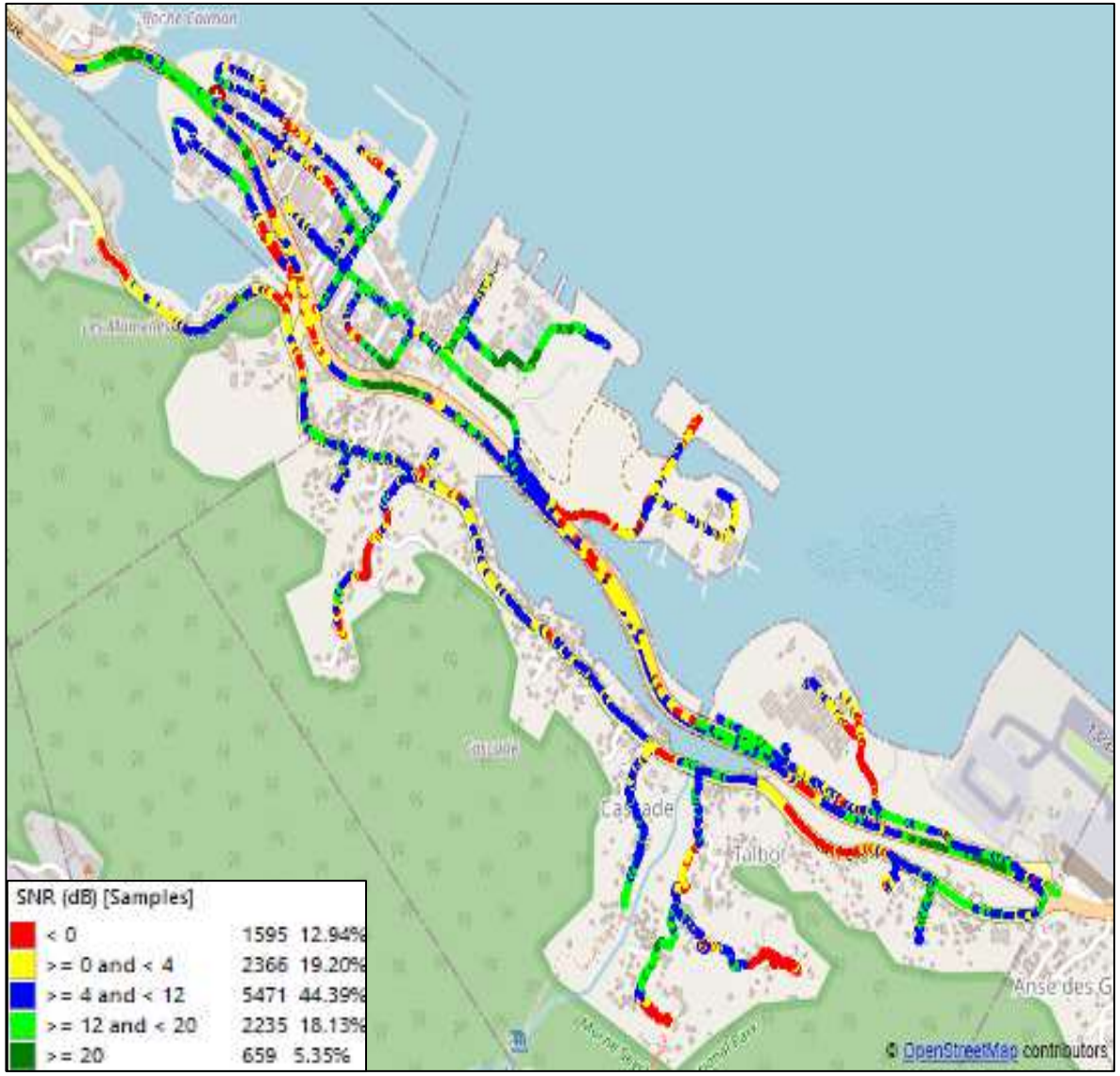


CWS Data 4G

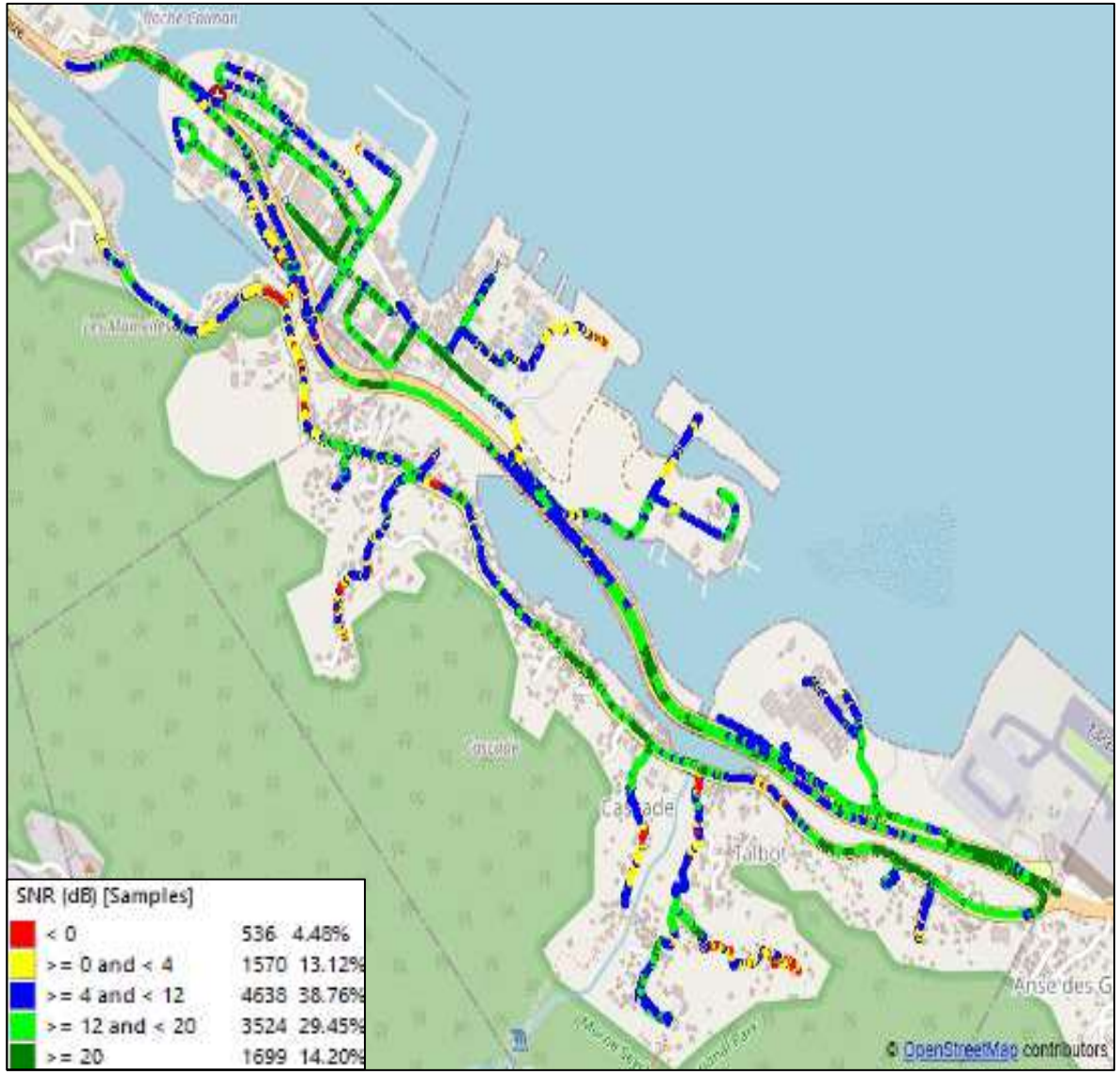


Phase-2 4G PREFERRED DATA TEST - SINR PLOT

Airtel Data 4G



CWS Data 4G



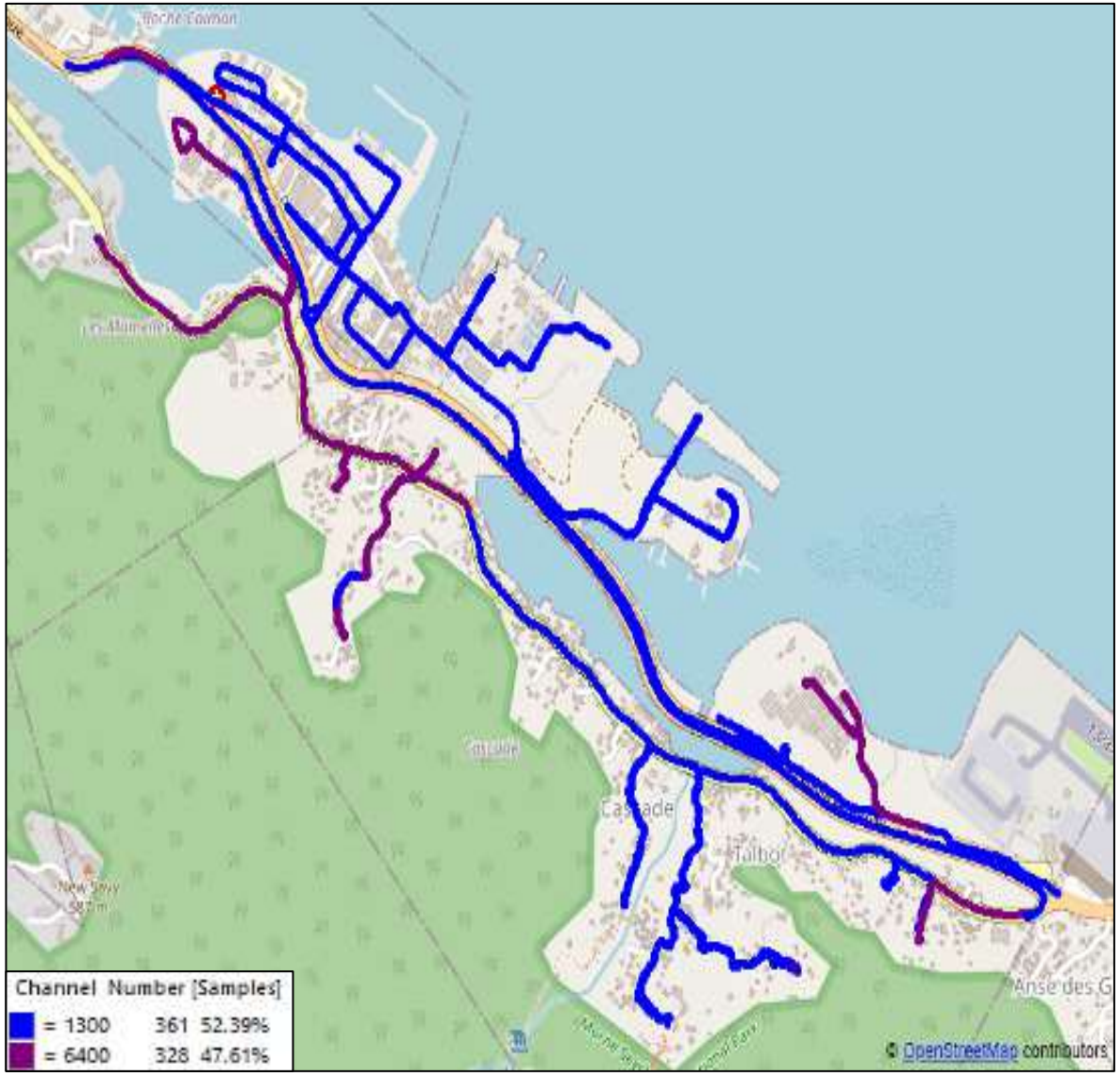
Phase-1 4G PREFERRED DATA TEST - FREQUENCY BAND PLOT

Airtel Data 4G

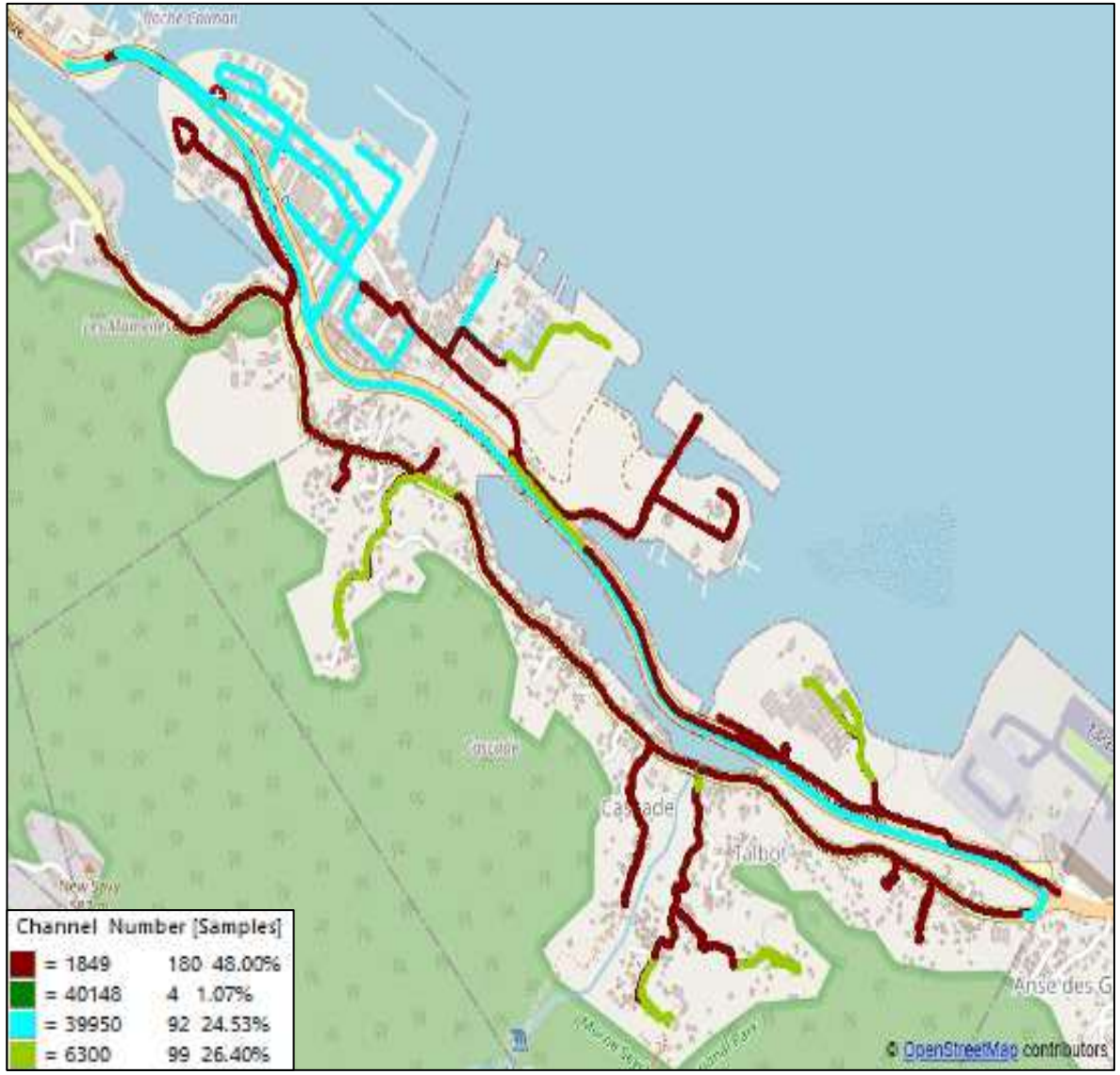
CWS Data 4G

Phase-2 4G PREFERRED DATA TEST - FREQUENCY BAND PLOT

Airtel Data 4G



CWS Data 4G



Phase-1 4G PREFERRED DATA TEST - CARRIER AGGREGATION PLOT

Airtel Data 4G

CWS Data 4G

Phase-2 4G PREFERRED DATA TEST - CARRIER AGGREGATION PLOT

Airtel Data 4G

CWS Data 4G

Phase-1 4G PREFERRED DATA TEST – BANDWIDTH PLOT

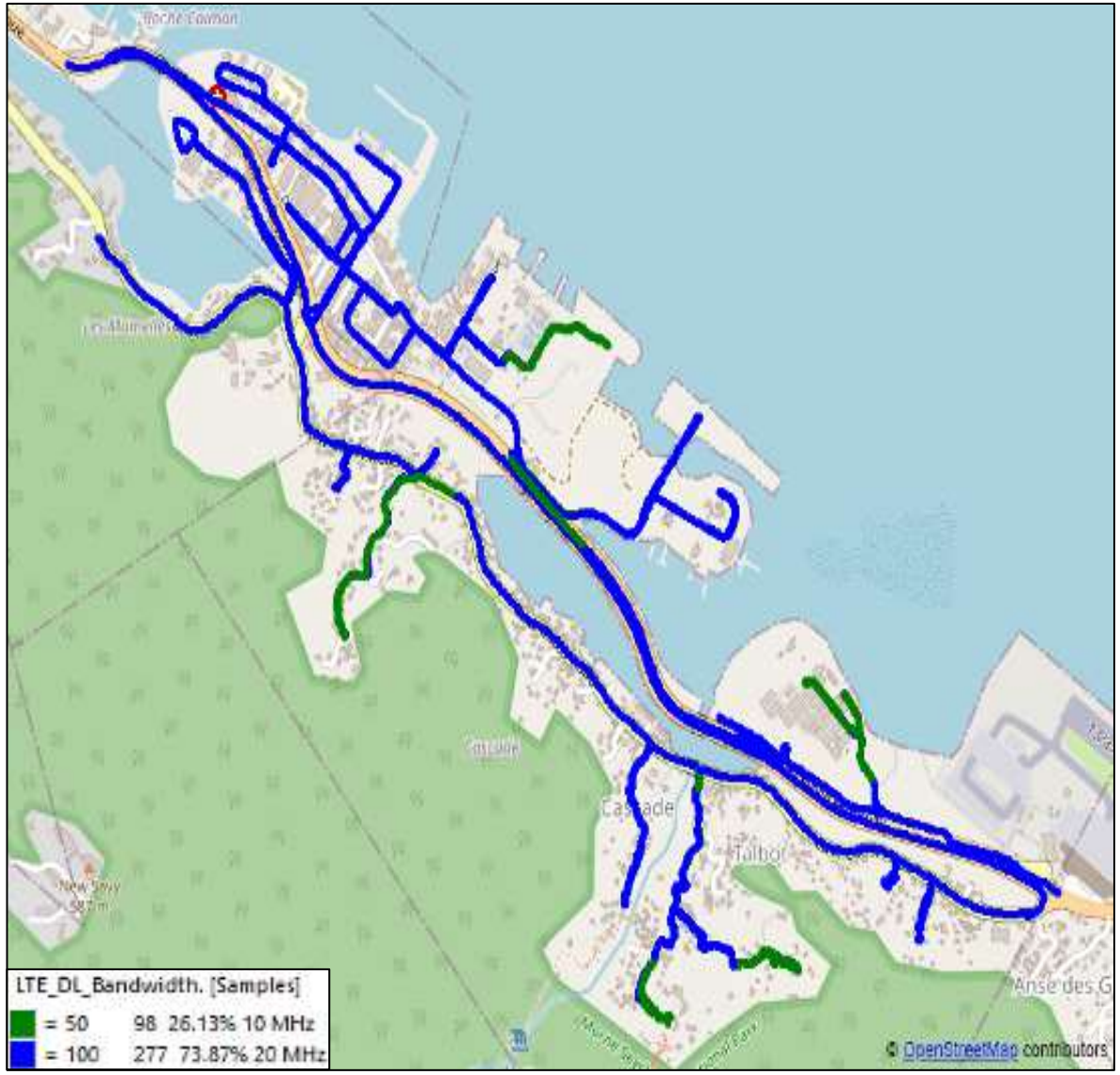
Airtel Data 4G

CWS Data 4G

Phase-2 4G PREFERRED DATA TEST – BANDWIDTH PLOT

Airtel Data 4G

CWS Data 4G



Negative Event Analysis

Phase-1 Call Drop & Call Attempt Failure Airtel , CWS Summary

Call Attempt Failure cause from Airtel	Count
Total Call Attempt Failure	0

Call Attempt Failure cause from CWS	Count
Total Call Attempt Failure	0

Call Drop cause from Airtel	Count
Total Call Drop	0

Call Drop cause from CWS	Count
Total Call Drop	0

Phase-2 Call Drop & Call Attempt Failure Airtel , CWS Summary

Call Attempt Failure cause from Airtel	Count
Total Call Attempt Failure	0

Call Attempt Failure cause from CWS	Count
Total Call Attempt Failure	1
Network End	1

Call Drop cause from Airtel	Count
Total Call Drop	0

Call Drop cause from CWS	Count
Total Call Drop	0

Phase-2 Call Attempt Failure Analysis 1 From MS7 CWC MO

	Time	System	Serving band	
1.	8:20:40.196	UMTS FDD	2100	Call

	1. best active RSCP	Time	Ch	SC	1. best active Ec/N0
9955.	-61.6	8:19:02.485	10740	93	
9956.		8:19:02.485	10740	93	-4.2
9957.	-60.8	8:19:03.027	10740	93	
9958.		8:19:03.027	10740	93	-3.3
9959.	-60.6	8:19:03.527	10740	93	
9960.		8:19:03.527	10740	93	-3.5
9961.	-62.3	8:19:04.026	10740	93	
9962.		8:19:04.026	10740	93	-7.2
9963.	-63.9	8:19:04.445	10740	93	
9964.		8:19:04.445	10740	93	-8.1
9965.	-59.1	8:19:05.027	10740	93	
9966.		8:19:05.027	10740	93	-3.5
9967.	-54.3	8:19:05.813	10740	93	
9968.		8:19:05.813	10740	93	-3.6
9969.	-61.6	8:19:05.945	10740	93	
9970.		8:19:05.945	10740	93	-6.1
9971.	-59.6	8:19:06.846	10740	93	
9972.		8:19:06.846	10740	93	-9.7
9973.	-62.2	8:19:07.227	10740	93	
9974.		8:19:07.227	10740	93	-4.1
9975.	-66.6	8:19:07.826	10740	93	
9976.		8:19:07.826	10740	93	-9.6
9977.	-60.3	8:19:08.406	10740	93	
9978.		8:19:08.406	10740	93	-3.7
9979.	-58	8:20:39.323	10740	93	
9980.		8:20:39.323	10740	93	-9.7
9981.	-58	8:20:39.909	10740	93	
9982.		8:20:39.909	10740	93	-3.5
9983.	-58	8:20:40.278	10740	93	
9984.		8:20:40.278	10740	93	-5.3
9985.	-58	8:20:40.882	10740	93	
9986.		8:20:40.882	10740	93	-4.3
9987.	-58	8:20:41.278	10740	93	
9988.		8:20:41.278	10740	93	-3.7
9989.	-58	8:20:41.879	10740	93	
9990.		8:20:41.879	10740	93	-4.4

	Event ID	System	Transf. dir.	Time	Subchannel	Message name
24236.	RRCSM	UMTS FDD	Uplink	8:20:39.323	DCCH	RRC_CONNECTION_SETUP_COMPLETE
24237.	RRCSM	UMTS FDD	Uplink	8:20:39.324	DCCH	INITIAL_DIRECT_TRANSFER
24238.	L3SM	UMTS FDD	Uplink	8:20:39.324	DCCH	CM_SERVICE_REQUEST
24239.	RRCSM	UMTS FDD	Uplink	8:20:39.324	DCCH	INITIAL_DIRECT_TRANSFER
24240.	L3SM	UMTS FDD	Uplink	8:20:39.324	DCCH	ROUTING_AREA_UPDATE_REQUEST
24241.	RRCSM	UMTS FDD	Downlink	8:20:39.557	DCCH	MEASUREMENT_CONTROL
24242.	RRCSM	UMTS FDD	Downlink	8:20:39.607	DCCH	DOWNLINK_DIRECT_TRANSFER
24243.	L3SM	UMTS FDD	Downlink	8:20:39.607	DCCH	AUTHENTICATION_REQUEST
24244.	RRCSM	UMTS FDD	Uplink	8:20:39.645	DCCH	UPLINK_DIRECT_TRANSFER
24245.	L3SM	UMTS FDD	Uplink	8:20:39.645	DCCH	AUTHENTICATION_RESPONSE
24246.	RRCSM	UMTS FDD	Downlink	8:20:39.757	DCCH	SECURITY_MODE_COMMAND
24247.	RRCSM	UMTS FDD	Uplink	8:20:39.758	DCCH	SECURITY_MODE_COMPLETE
24248.	RRCSM	UMTS FDD	Uplink	8:20:39.909	DCCH	UPLINK_DIRECT_TRANSFER
24249.	L3SM	UMTS FDD	Uplink	8:20:39.909	DCCH	SETUP
24250.	RRCSM	UMTS FDD	Downlink	8:20:39.909	DCCH	DOWNLINK_DIRECT_TRANSFER
24251.	L3SM	UMTS FDD	Downlink	8:20:39.909	DCCH	TMSI_REALLOCATION_COMMAND
24252.	RRCSM	UMTS FDD	Uplink	8:20:39.909	DCCH	UPLINK_DIRECT_TRANSFER
24253.	L3SM	UMTS FDD	Uplink	8:20:39.909	DCCH	TMSI_REALLOCATION_COMPLETE
24254.	RRCSM	UMTS FDD	Uplink	8:20:39.930	DCCH	UPLINK_DIRECT_TRANSFER
24255.	L3SM	UMTS FDD	Uplink	8:20:39.930	DCCH	DISCONNECT
24256.	RRCSM	UMTS FDD	Downlink	8:20:40.196	DCCH	DOWNLINK_DIRECT_TRANSFER
24257.	L3SM	UMTS FDD	Downlink	8:20:40.196	DCCH	CALL_PROCEEDING
24258.	RRCSM	UMTS FDD	Uplink	8:20:40.196	DCCH	UPLINK_DIRECT_TRANSFER
24259.	L3SM	UMTS FDD	Uplink	8:20:40.196	DCCH	STATUS
24260.	RRCSM	UMTS FDD	Downlink	8:20:40.196	DCCH	DOWNLINK_DIRECT_TRANSFER
24261.	L3SM	UMTS FDD	Downlink	8:20:40.196	DCCH	RELEASE
24262.	RRCSM	UMTS FDD	Uplink	8:20:40.196	DCCH	UPLINK_DIRECT_TRANSFER
24263.	L3SM	UMTS FDD	Uplink	8:20:40.196	DCCH	RELEASE_COMPLETE
24264.	RRCSM	UMTS FDD	Downlink	8:20:40.196	DCCH	DOWNLINK_DIRECT_TRANSFER
24265.	L3SM	UMTS FDD	Downlink	8:20:40.196	DCCH	AUTHENTICATION_AND_CIPHERING_REQU
24266.	RRCSM	UMTS FDD	Downlink	8:20:40.196	DCCH	DOWNLINK_DIRECT_TRANSFER
24267.	L3SM	UMTS FDD	Downlink	8:20:40.196	DCCH	RELEASE_COMPLETE
24268.	RRCSM	UMTS FDD	Uplink	8:20:40.196	DCCH	UPLINK_DIRECT_TRANSFER
24269.	L3SM	UMTS FDD	Uplink	8:20:40.196	DCCH	AUTHENTICATION_AND_CIPHERING_RESPO
24270.	RRCSM	UMTS FDD	Downlink	8:20:40.196	DCCH	SIGNALLING_CONNECTION_RELEASE
24271.	RRCSM	UMTS FDD	Uplink	8:20:40.196	DCCH	INITIAL_DIRECT_TRANSFER

Analysis:

- This call failure event occurred on short call at 08:20:40:196 time when UE was latched with 3G network.
- After sending “CM Service Request” message to core network, then core network responds with “Call Proceeding ” message. After that call setup has been failed.
- During the failure, UE was latched with PSC 93 and RF condition RSCP -58 dBm good but Ec/No -3.5 dB are very poor.
- Need to check MT.

Phase-2 Call Attempt Failure Analysis 1 From MS8 CWS MT

	Time	Band (MHz)	Ch	PCI	RSRP	SNR
13854.	8:20:20.881					16.3
13855.	8:20:22.224	2496	39950	182	-82	
13856.	8:20:22.224					17.3
13857.	8:20:23.365	2496	39950	182	-82.1	
13858.	8:20:23.365					17.9
13859.	8:20:24.882	2496	39950	182	-81.6	
13860.	8:20:24.882					25.9
13861.	8:20:25.925	2496	39950	182	-81.7	
13862.	8:20:25.925					25.7
13863.	8:20:27.204	2496	39950	182	-81.7	
13864.	8:20:27.204					25.2
13865.	8:20:28.483	2496	39950	182	-81.6	
13866.	8:20:28.483					21.7
13867.	8:20:30.224	2496	39950	182	-81.3	
13868.	8:20:30.224					25.5
13869.	8:20:31.045	2496	39950	182	-81.3	
13870.	8:20:31.045					23.5
13871.	8:20:32.321	2496	39950	182	-81.1	
13872.	8:20:32.321					25.4
13873.	8:20:33.835	2496	39950	182	-81.5	
13874.	8:20:33.835					25.9
13875.	8:20:34.881	2496	39950	182	-81.7	
13876.	8:20:34.881					18
13877.	8:20:36.524	2496	39950	182	-81.9	
13878.	8:20:36.524					21.2
13879.	8:20:37.903	2496	39950	182	-82.1	
13880.	8:20:37.903					19.5
13881.	8:20:38.883	2496	39950	182	-81.8	
13882.	8:20:38.883					20
13883.	8:20:40.023	2496	39950	182	-81.7	
13884.	8:20:40.023					22.6
13885.	8:20:41.444	2496	39950	182	-82.4	
13886.	8:20:41.444					22.5
13887.	8:20:43.244	2496	39950	182	-81.8	
13888.	8:20:43.244					23.5
13889.	8:20:43.883	2496	39950	182	-82.4	
13890.	8:20:43.883					24.6
13891.	8:20:45.124	2496	39950	182	-82.8	

	Event ID	System	Transf. dir.	Time	Subchannel	Message name
23337.	RRCSM	LTE TDD	Downlink	8:19:45.096	DCCH	RRCConnectionReconfiguration
23338.	RRCSM	LTE TDD	Uplink	8:19:45.098	DCCH	RRCConnectionReconfigurationComplete
23339.	RRCSM	LTE TDD	Downlink	8:19:47.339	PCCH	Paging
23340.	RRCSM	LTE TDD	Downlink	8:19:49.899	PCCH	Paging
23341.	RRCSM	LTE TDD	Downlink	8:19:51.179	PCCH	Paging
23342.	RRCSM	LTE TDD	Downlink	8:19:54.056	DCCH	RRCConnectionRelease
23343.	RRCSM	LTE TDD	Downlink	8:19:55.199	PCCH	Paging
23344.	RRCSM	LTE TDD	Downlink	8:19:57.761	PCCH	Paging
23345.	RRCSM	LTE TDD	Downlink	8:19:59.041	PCCH	Paging
23346.	RRCSM	LTE TDD	Downlink	8:20:00.321	PCCH	Paging
23347.	RRCSM	LTE TDD	Downlink	8:20:08.094	PCCH	Paging
23348.	RRCSM	LTE TDD	Downlink	8:20:09.281	PCCH	Paging
23349.	RRCSM	LTE TDD	Downlink	8:20:10.561	PCCH	Paging
23350.	RRCSM	LTE TDD	Downlink	8:20:16.006	PCCH	Paging
23351.	RRCSM	LTE TDD	Downlink	8:20:20.801	PCCH	Paging
23352.	RRCSM	LTE TDD	Downlink	8:20:23.361	PCCH	Paging
23353.	RRCSM	LTE TDD	Downlink	8:20:28.481	PCCH	Paging
23354.	RRCSM	LTE TDD	Downlink	8:20:34.881	PCCH	Paging
23355.	RRCSM	LTE TDD	Downlink	8:20:36.161	PCCH	Paging
23356.	RRCSM	LTE TDD	Downlink	8:20:37.441	PCCH	Paging
23357.	RRCSM	LTE TDD	Downlink	8:20:38.721	PCCH	Paging
23358.	RRCSM	LTE TDD	Downlink	8:20:40.001	PCCH	Paging
23359.	RRCSM	LTE TDD	Downlink	8:20:41.281	PCCH	Paging
23360.	RRCSM	LTE TDD	Downlink	8:20:46.401	PCCH	Paging
23361.	RRCSM	LTE TDD	Downlink	8:20:50.241	PCCH	Paging
23362.	RRCSM	LTE TDD	Downlink	8:20:55.361	PCCH	Paging
23363.	RRCSM	LTE TDD	Downlink	8:20:56.641	PCCH	Paging
23364.	RRCSM	LTE TDD	Downlink	8:21:00.481	PCCH	Paging
23365.	RRCSM	LTE TDD	Downlink	8:21:04.321	PCCH	Paging
23366.	RRCSM	LTE TDD	Downlink	8:21:05.601	PCCH	Paging
23367.	RRCSM	LTE TDD	Downlink	8:21:12.001	PCCH	Paging
23368.	RRCSM	LTE TDD	Downlink	8:21:17.121	PCCH	Paging
23369.	RRCSM	LTE TDD	Downlink	8:21:18.401	PCCH	Paging
23370.	RRCSM	LTE TDD	Downlink	8:21:19.681	PCCH	Paging
23371.	RRCSM	LTE TDD	Downlink	8:21:20.961	PCCH	Paging
23372.	RRCSM	LTE TDD	Downlink	8:21:23.996	PCCH	Paging
23373.	RRCSM	LTE TDD	Downlink	8:21:24.801	PCCH	Paging
23374.	RRCSM	LTE TDD	Downlink	8:21:28.641	PCCH	Paging

Analysis:

- On MT End, During the setup fail, UE was latched with PCI 182 and RF condition RSRP -81.7 dBm is and SINR 22.6 which is good.
- As per the analysis call failure happened from network end.

THANKS