



NATIONAL COMMUNICATIONS AUTHORITY

3G Coverage Assessment of Cellular Mobile Services- Western Region

[September 2016]

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Background

In pursuance of obligations of the 3G Cellular Mobile Licence of Telecommunication Operators, the consumer perspective of the 3G Coverage status are tested to ensure the compliance of Operators to the obligations on 3G Coverage to the user.

The report is based on findings on 3G verification campaign in the Western Region from 6th to 24th September 2016 for all Operators except Expresso due to technical challenges.

What we measure

As per the 3G Cellular Mobile licence obligations, 3G-locked mode coverage samples are collected to obtain on the average a signal strength measurement which is representative of the coverage situation in each of the District Capital that was driven.

The 3G Signal Strength and their respective threshold for compliance considering the user's perspective are categorised as follows:

Rating	3G Signal Strength Range (dBm)
No 3G Coverage	$-105 > \text{RSCP}$
Poor	$-105 \leq \text{RSCP} < -95$
Fair	$-95 \leq \text{RSCP} < -85$
Good	$-85 \leq \text{RSCP} < -20$

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Findings

The results for the district capitals within Western Region tested during the period are as below:

Table 1: Coverage Signal strength, September, 2016

DISTRICT CAPITAL	MTN	VODAFONE	TIGO	AIRTEL	GLO
ADABOKROM	No 3G Coverage	No 3G Coverage	No 3G Coverage	No 3G Coverage	No 3G Coverage
AGONA NKWANTA	Good	Good	Good	Good	Good
AKONTOMBRA	Good	Good	Fair	Good	No 3G Coverage
ASANKRAGUA	Good	Good	Fair	Fair	No 3G Coverage
AXIM	Good	Good	Fair	Fair	Fair
BIBIANI	Good	Fair	Good	Fair	No 3G Coverage
BODI	Good	Good	Poor	Fair	No 3G Coverage
BOGOSO	Good	Good	Good	Good	No 3G Coverage
DABOASE	Good	Good	Good	Good	No 3G Coverage
DADIESO	Good	Good	No 3G Coverage	No 3G Coverage	No 3G Coverage
ENCHI	Fair	Good	Fair	Good	No 3G Coverage
ESSAM DEBISO	Good	Fair	No 3G Coverage	Good	No 3G Coverage
HALF-ASSINI	Good	Good	Good	Fair	No 3G Coverage

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DISTRICT CAPITAL	MTN	VODAFONE	TIGO	AIRTEL	GLO
JUABOSO	Good	Good	Good	Good	No 3G Coverage
MANSO AMENFI	No 3G Coverage	Good	No 3G Coverage	No 3G Coverage	No 3G Coverage
MPOHOR	Good	Good	Good	Good	Good
NKROFUL	Good	Good	Good	Good	Poor
SEKONDI	Good	Good	Good	Good	Good
SHAMA	Good	Good	Good	Good	Poor
TARKWA	Good	Good	Good	Fair	Fair
WASSA AKROPONG	Good	Good	Fair	Fair	Good
WIAWSO	Fair	Fair	Fair	Fair	No 3G Coverage

REMARKS:

- ❖ MTN had good 3G coverage in Agona Nkwanta, Akontombra, Asankragua, Axim, Bodi, Bogoso, Daboase, Dadieso, Essam Debiso, Half-Assini, Juaboso, Mpohor, Nkroful, Sekondi, Shama, Tarkwa, and Wassa Akropong.
- ❖ MTN had fair 3G coverage in Enchi and Wiawso.
- ❖ MTN had no coverage in Adabokrom and Manso Amenfi.
- ❖ Vodafone had good 3G in Agona Nkwanta, Akontombra, Asankragua, Axim, Bodi, Bogoso, Daboase, Dadieso, Enchi, Half-Assini, Juaboso, Manso Amenfi, Mpohor, Nkroful, Sekondi, Shama, Tarkwa and Wassa Akropong.
- ❖ Vodafone had fair 3G coverage in Bibiani, Essam Debiso and Wiawso.
- ❖ Vodafone had no 3G coverage in Adabokrom.
- ❖ Tigo had good 3G coverage in Agona Nkwanta, Bibiani, Bogoso, Daboase, Half-Assini, Juaboso, Mpohor, Nkroful, Sekondi, Shama and Tarkwa.

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- ❖ Tigo had fair 3G coverage in Akontombra, Asankragua, Axim, Enchi, Wassa Akropong and Wiawso.
- ❖ Tigo had poor 3G coverage in Bodi.
- ❖ Tigo had no 3G coverage in Adabokrom, Dadieso, Essam Debiso and Manso Amenfi.
- ❖ Airtel had good 3G coverage in Agona Nkwanta, Akontombra, Bogoso, Daboase, Enchi, Essam Debiso, Juaboso, Mpohor, Nkroful, Sekondi and Shama.
- ❖ Airtel had fair 3G coverage in Asankragwa, Axim, Bibiani, Bodi, Half-Assini, Tarkwa, Wassa Akropong and Wiawso.
- ❖ Airtel had no 3G coverage in Adabokrom, Dadieso and Manso Amenfi.
- ❖ Glo had good coverage in Agona Nkwanta, Mpohor, Sekondi and Wassa Akropong.
- ❖ Glo had fair coverage in Axim and Tarkwa.
- ❖ Glo had poor 3G Coverage Nkroful and Shama.
- ❖ Glo had no 3G Coverage in Adabokrom, Akontombra, Asankragua, Bibiani, Bodi, Bogoso, Daboase, Dadieso, Enchi, Essam Debiso, Half-Assini, Juaboso, Manso Amenfi and Wiawso.

Remedies:

- ❖ Tigo has been sanctioned for failing to maintain 3G coverage at Essam Debiso.
- ❖ All operators were yet again given a deadline of 31st December, 2016 to provide 3G coverage in the new District Capitals that were drive-tested.
- ❖ All operators were directed to improve their existing 3G coverage by 15th December, 2016, even at localities where coverage was rated “Good”.





APPENDICES

Coverage Signal Strength

The Maps below show the coverage level in District Capitals of the Western Region where monitoring was performed. The coverage map is based on the 3G network signal strength when tested in an idle mode. In each plot is a legend to indicate the signal strength and quality range attained by Operators during measurement.

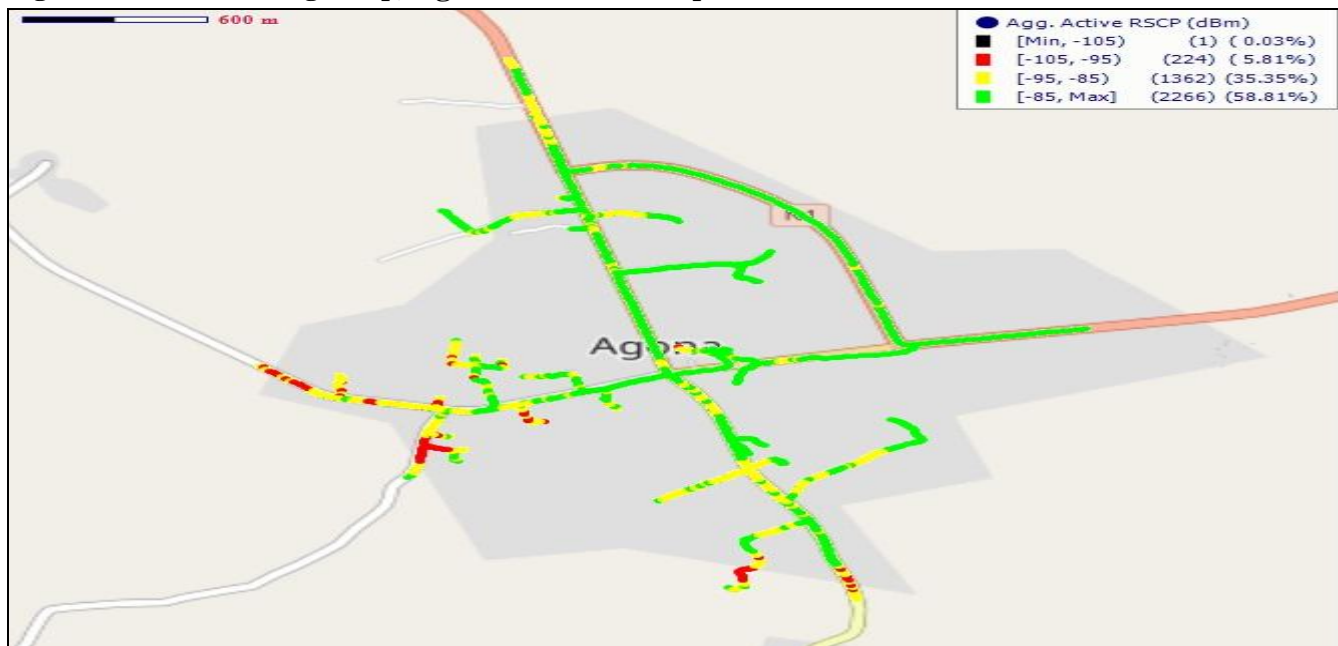
Coverage levels in green falls in the range of -85dBm and above, and are considered good. Those between -85 and -95dBm are considered average or fair and are indicated in yellow. The red samples represent worse or poor coverage in the range of -95 to -105dBm. The black samples represent areas with no 3G coverage.

Coverage Legend

<i>Colour</i>	<i>Area Coverage Rating</i>
	Good Coverage Areas
	Fair Coverage Areas
	Poor Coverage Areas
	Non-Existent Coverage Areas

APPENDIX I
COVERAGE AT AGONA NKWANTA

Fig 1– MTN 3G Coverage Map, Agona Nkwanta – September 2016



Remarks Good 3G coverage at Agona Nkwanta

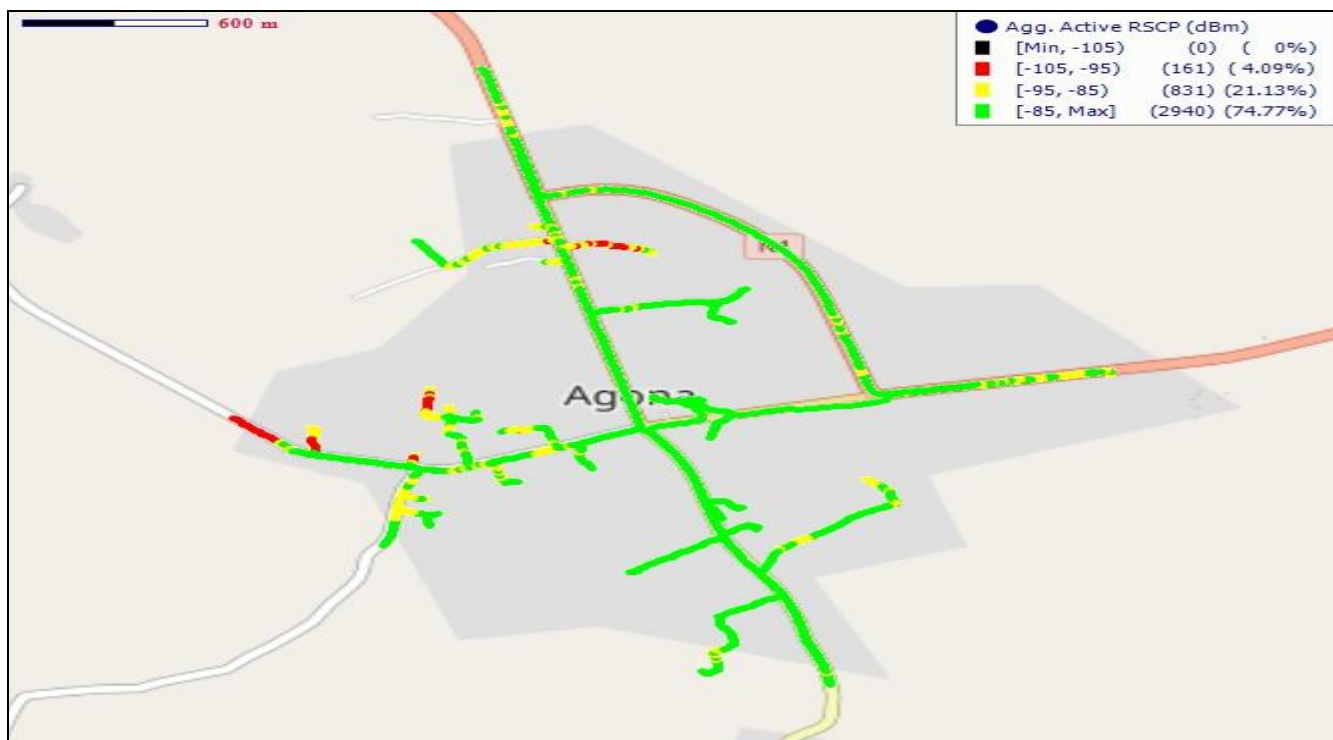
Fig 2– Vodafone 3G Coverage Map, Agona Nkwanta - September 2016



Remarks: Good 3G coverage at Agona Nkwanta

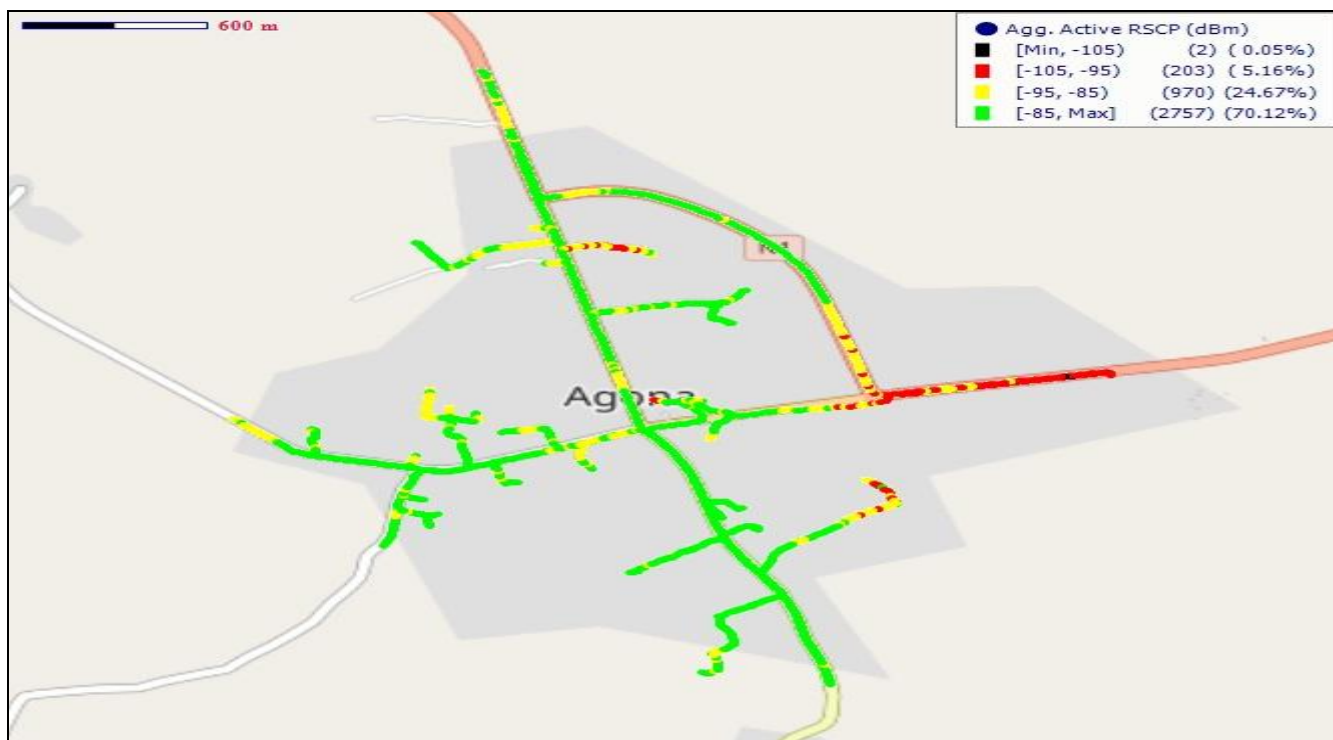
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Fig 3– Tigo 3G Coverage Map, Agona Nkwanta- September 2016



Remarks: Good 3G coverage in Agona Nkwanta

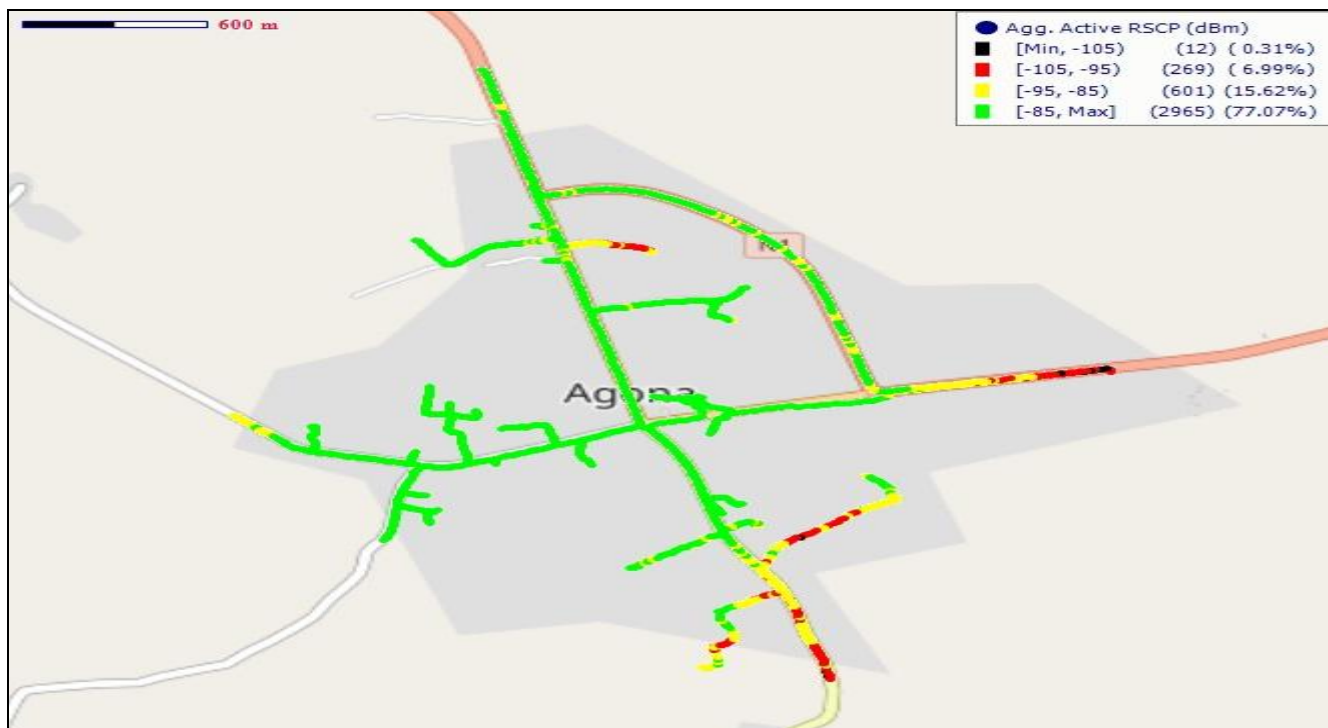
Fig 4– Airtel 3G Coverage Map, Agona Nkwanta - September 2016



Remarks: Good 3G coverage in Agona Nkwanta

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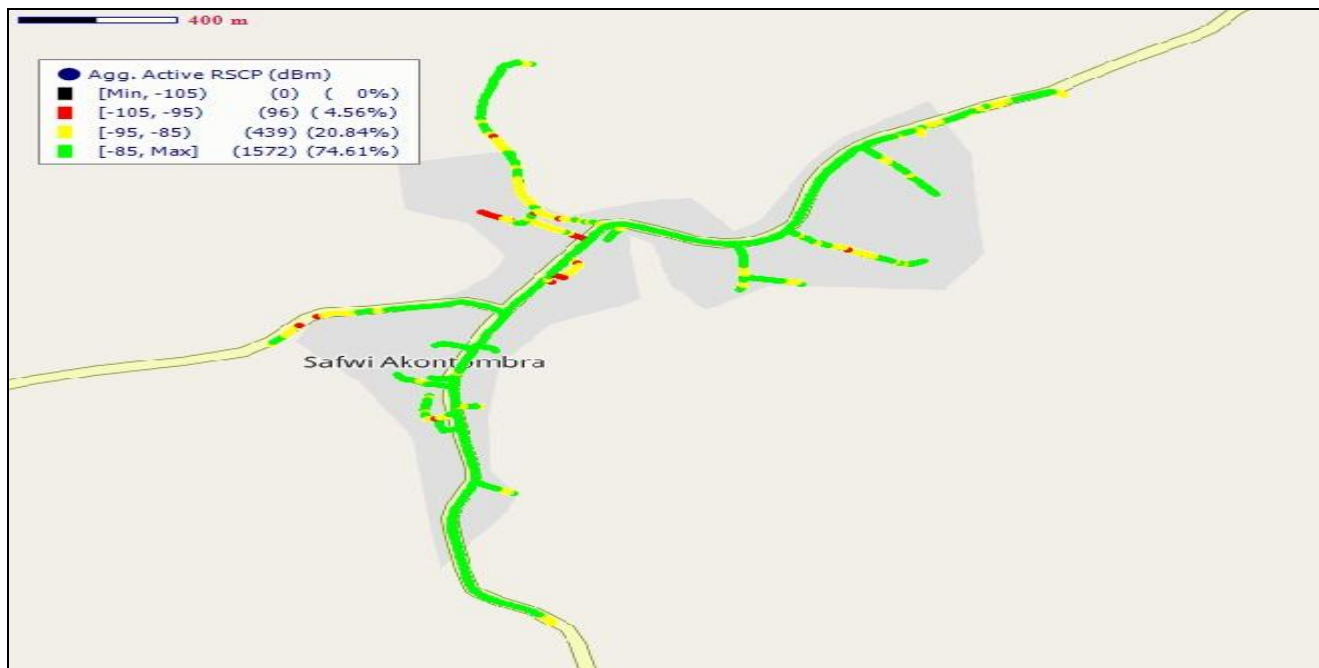
Fig 5– Glo 3G Coverage Map, Agona Nkwanta - September 2016



Remarks: Good 3G coverage in Agona Nkwanta

COVERAGE AT AKONTOMMBRA

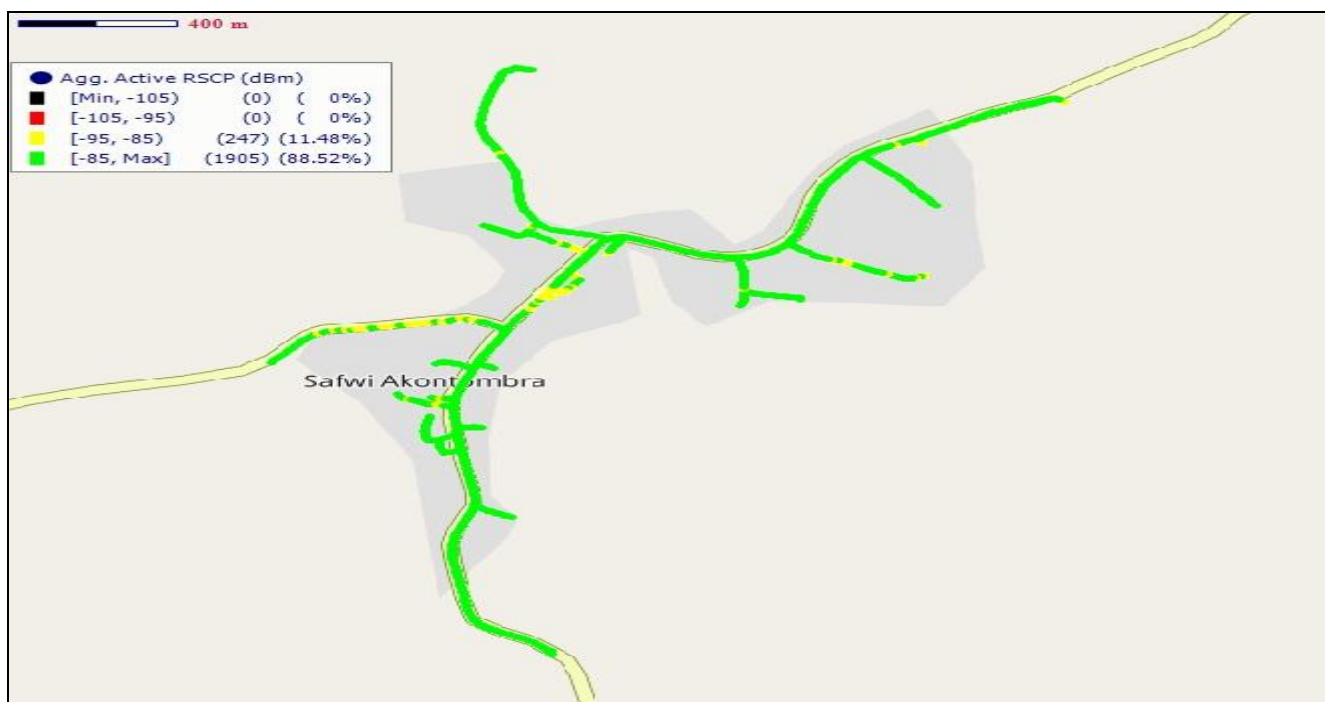
Fig 6- MTN 3G Coverage Map, Akontombra - September 2016



Remarks: Good 3G coverage at Sefwi Akontombra

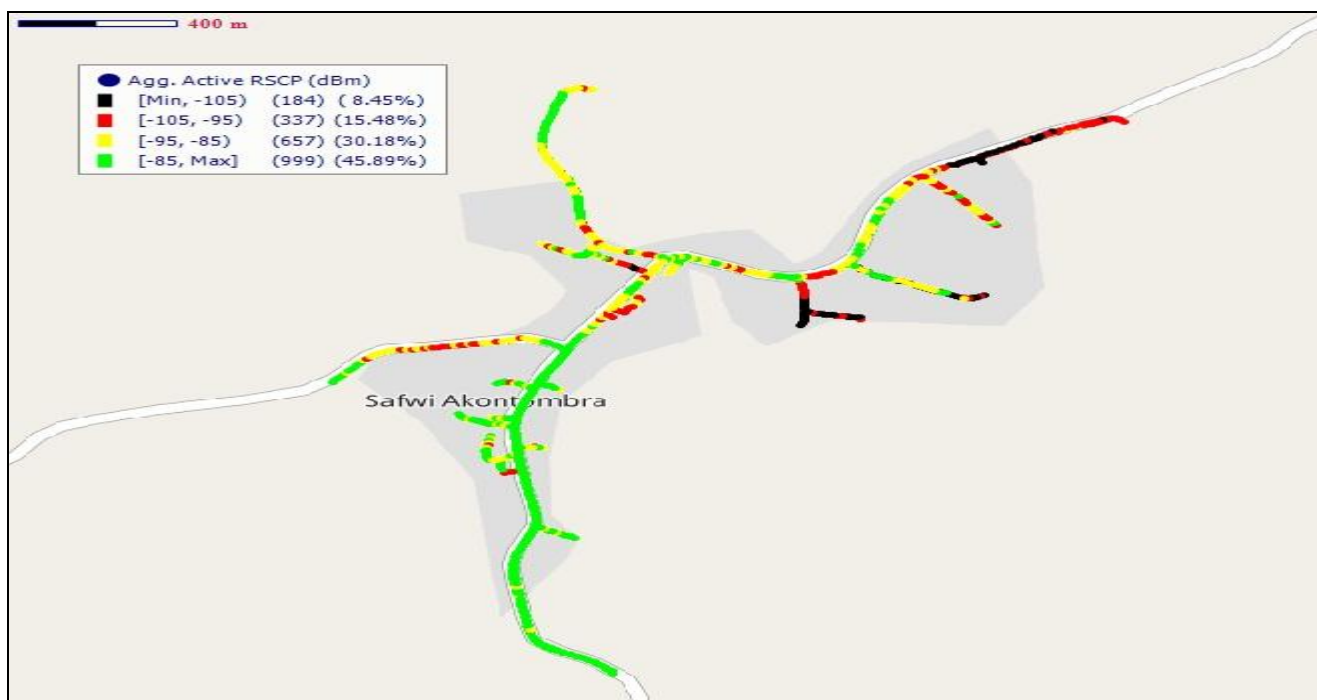
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Fig 7- Vodafone 3G Coverage Map, Akontombra - September 2016



Remarks: Good 3G coverage at Sefwi Akontombra

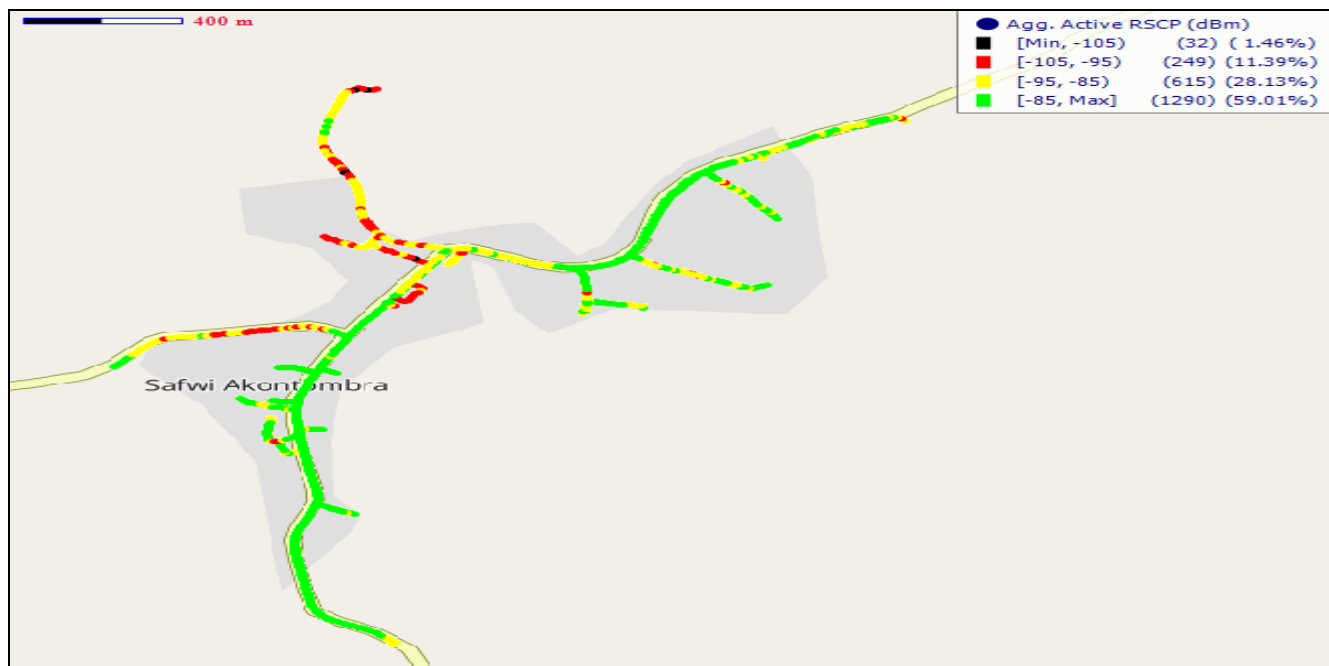
Fig 8- Tigo 3G Coverage Map, Akontombra - September 2016



Remarks: Fair 3G coverage in Akontombra however improvement is required.

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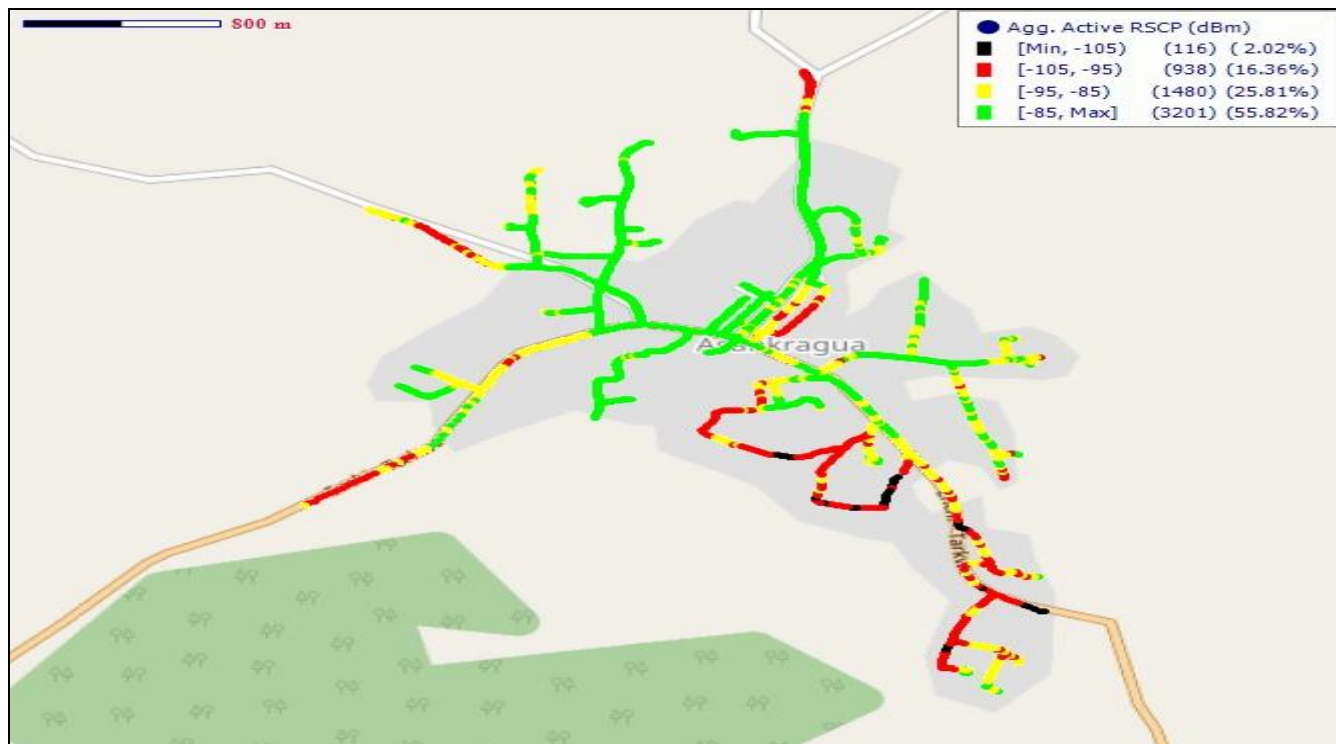
Fig 9- Airtel 3G Coverage Map, Akontombra - September 2016



Remarks: Good 3G coverage at Sefwi Akontombra

COVERAGE AT ASANKRAGUA

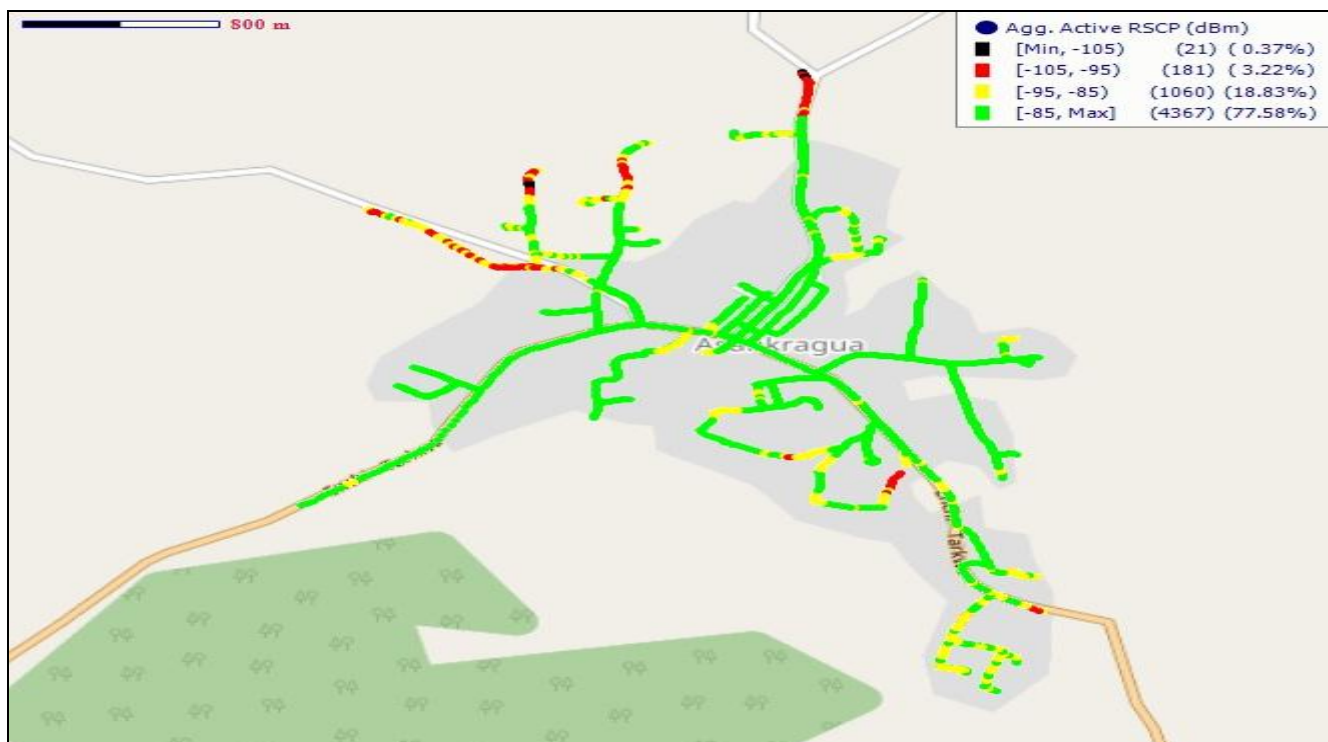
Fig 10- MTN 3G Coverage Map, Asankragua - September 2016



Remarks: Good 3G coverage at Asankragua however improvement is required

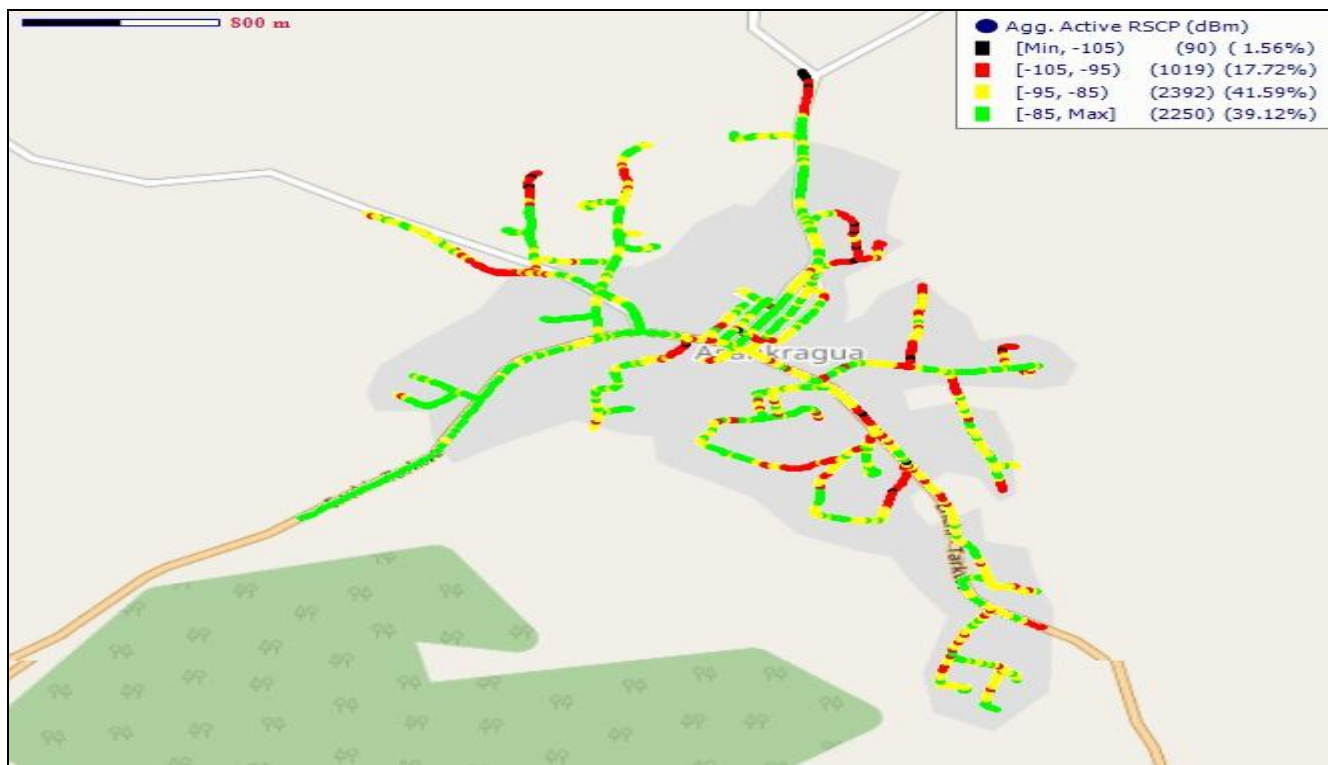
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Fig 11- Vodafone 3G Coverage Map, Asankragua - September 2016



Remarks: Good 3G coverage at Asankragua

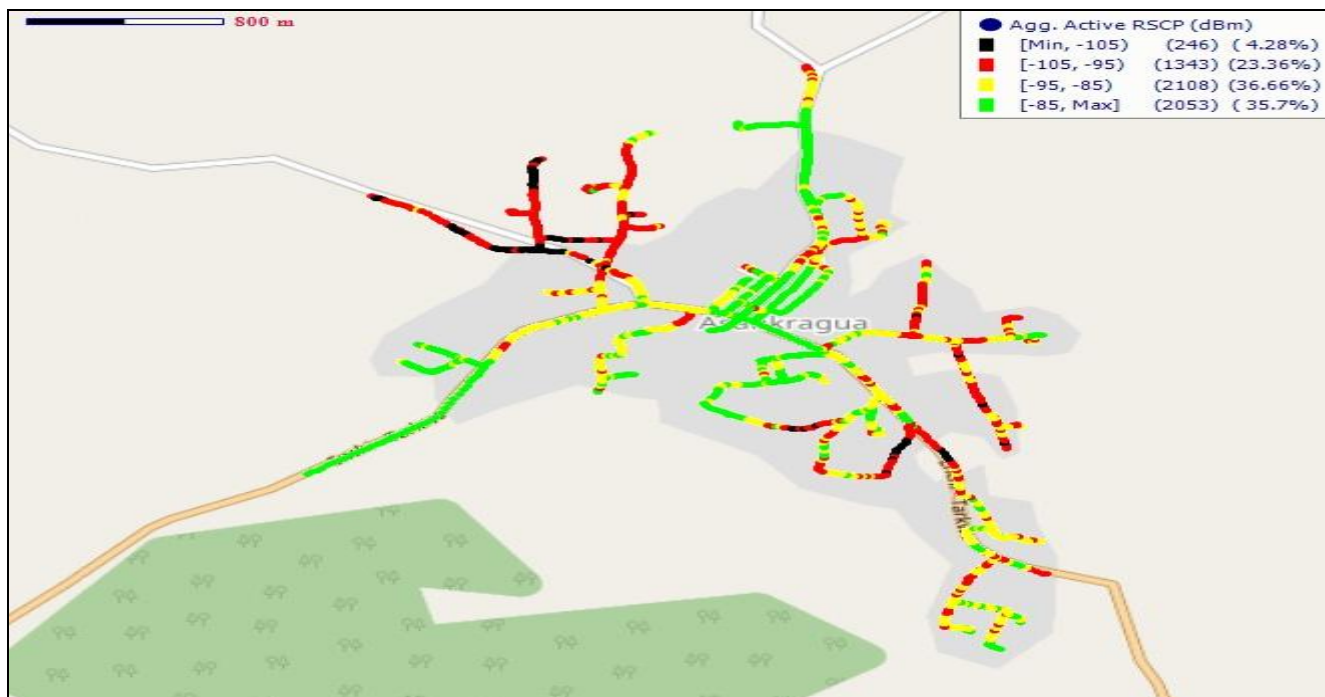
Fig 12-Tigo 3G Coverage Map, Asankragua - September 2016



Remarks: Fair 3G coverage Asankragua however improvement is required

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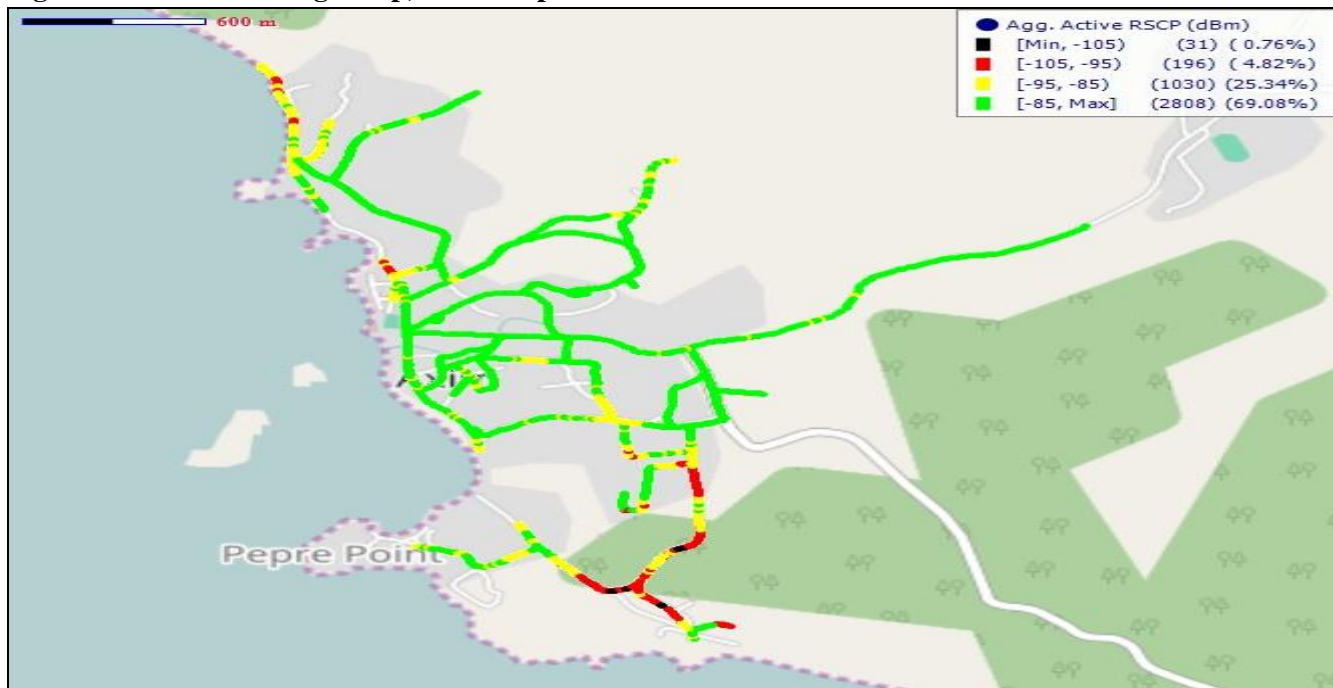
Fig 13-Airtel 3G Coverage Map, Asankragua - September 2016



Remarks: Fair 3G coverage Asankragua which requires improvement

COVERAGE AT AXIM

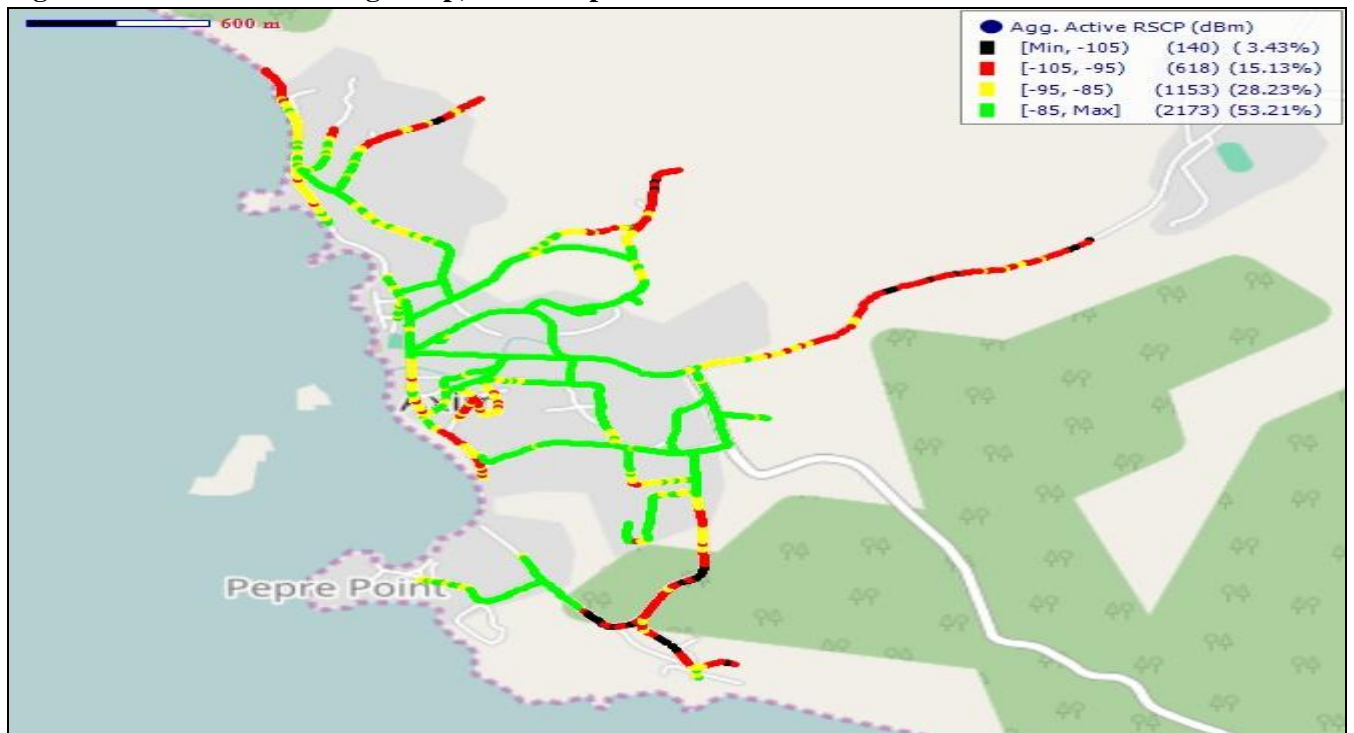
Fig 14- MTN 3G Coverage Map, Axim- September 2016



Remarks: Good 3G coverage at Axim.

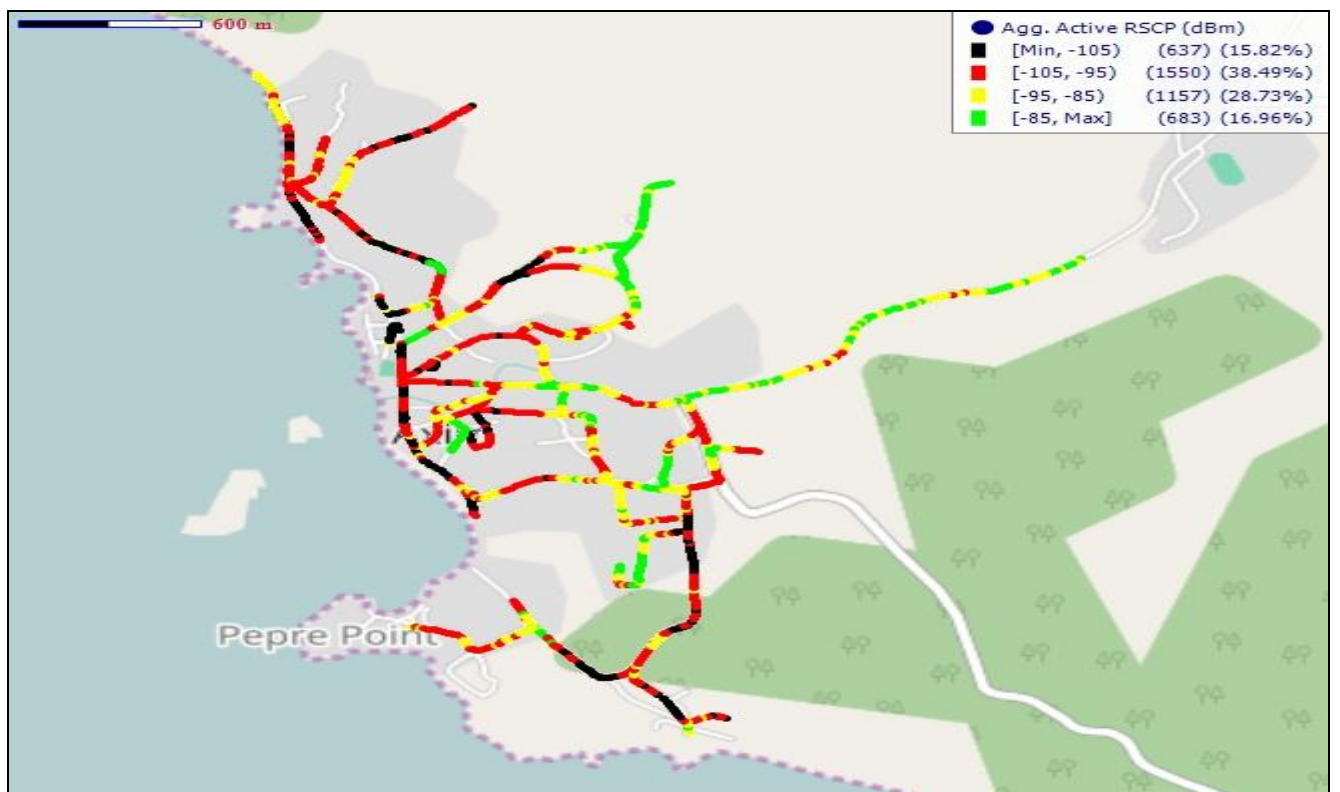
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Fig 15- Vodafone 3G Coverage Map, Axim- September 2016



Remarks: Good 3G coverage at Axim.

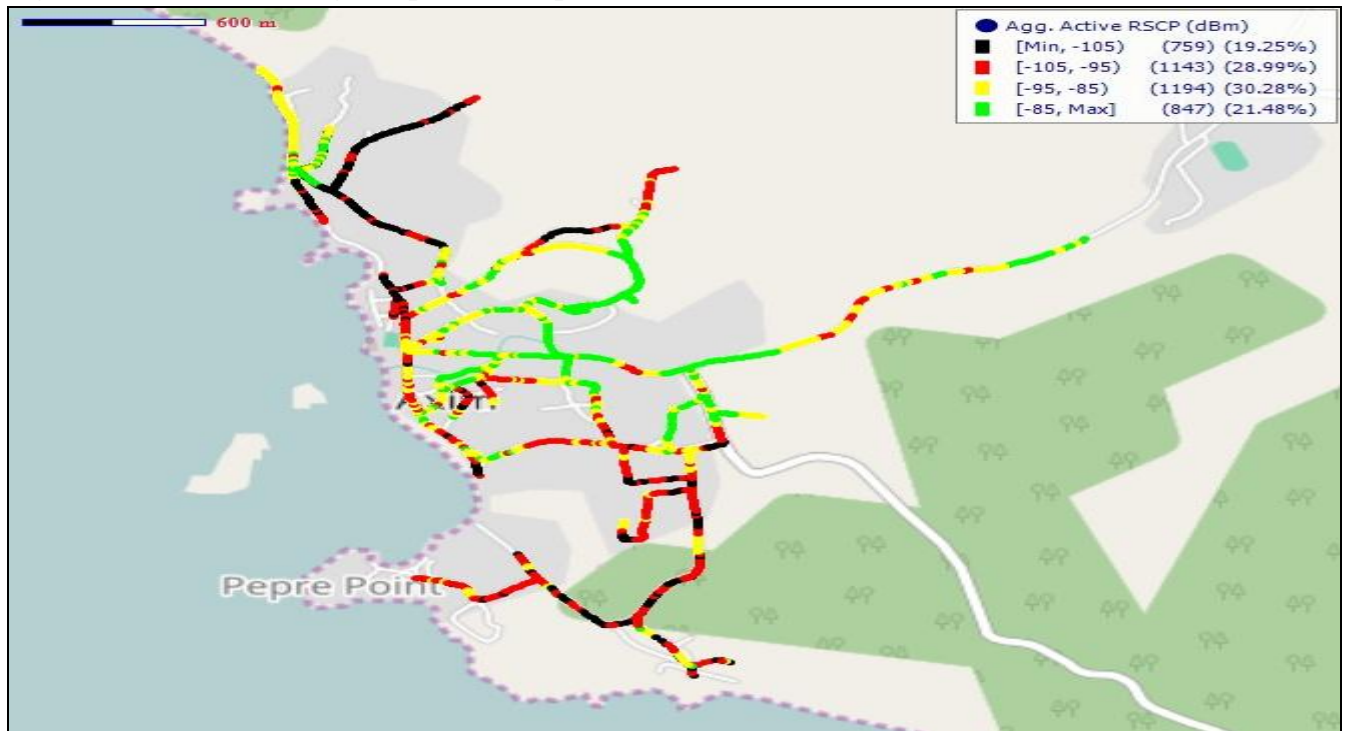
Fig 16- Tigo 3G Coverage Map, Axim- September 2016



Remarks: Fair 3G coverage in and around Axim which needs to be improved

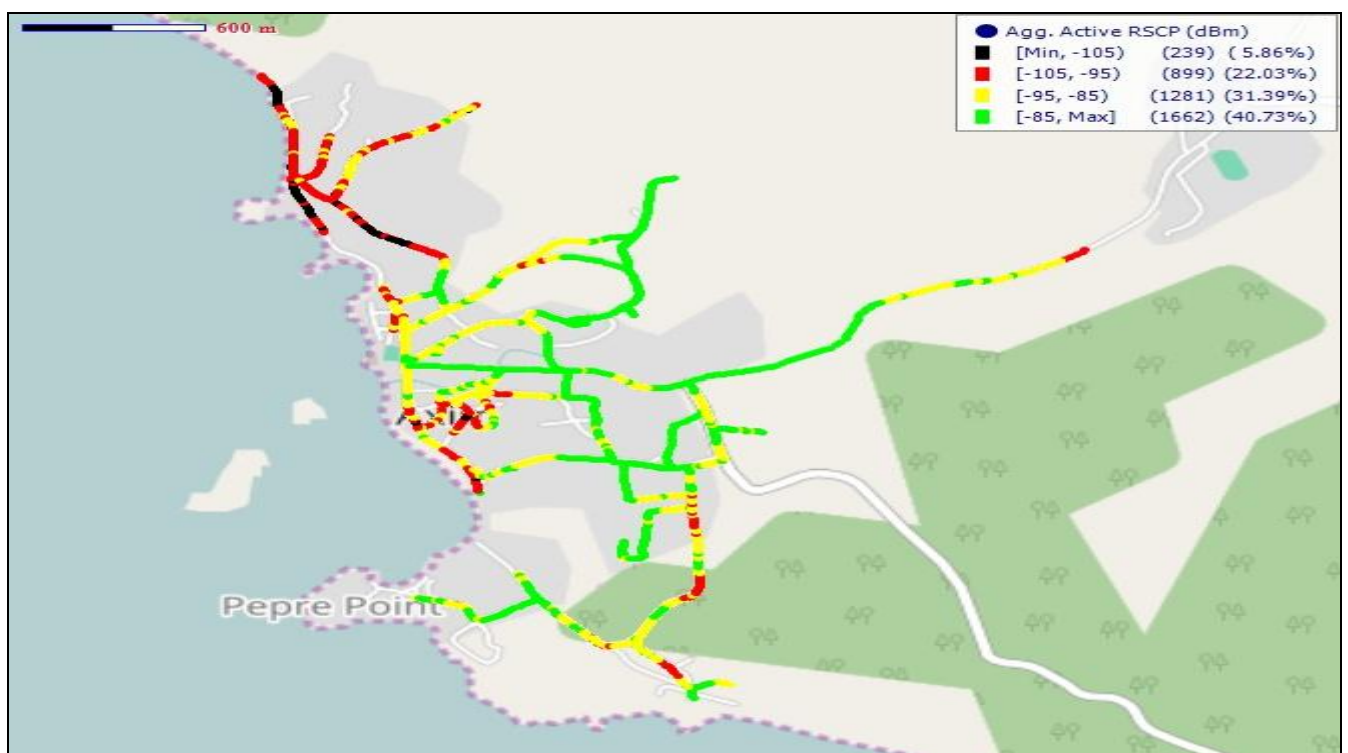
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Fig 17 – Airtel 3G Coverage Map, Axim- September 2016



Remarks: Fair 3G coverage in and around Axim that needs to be improved

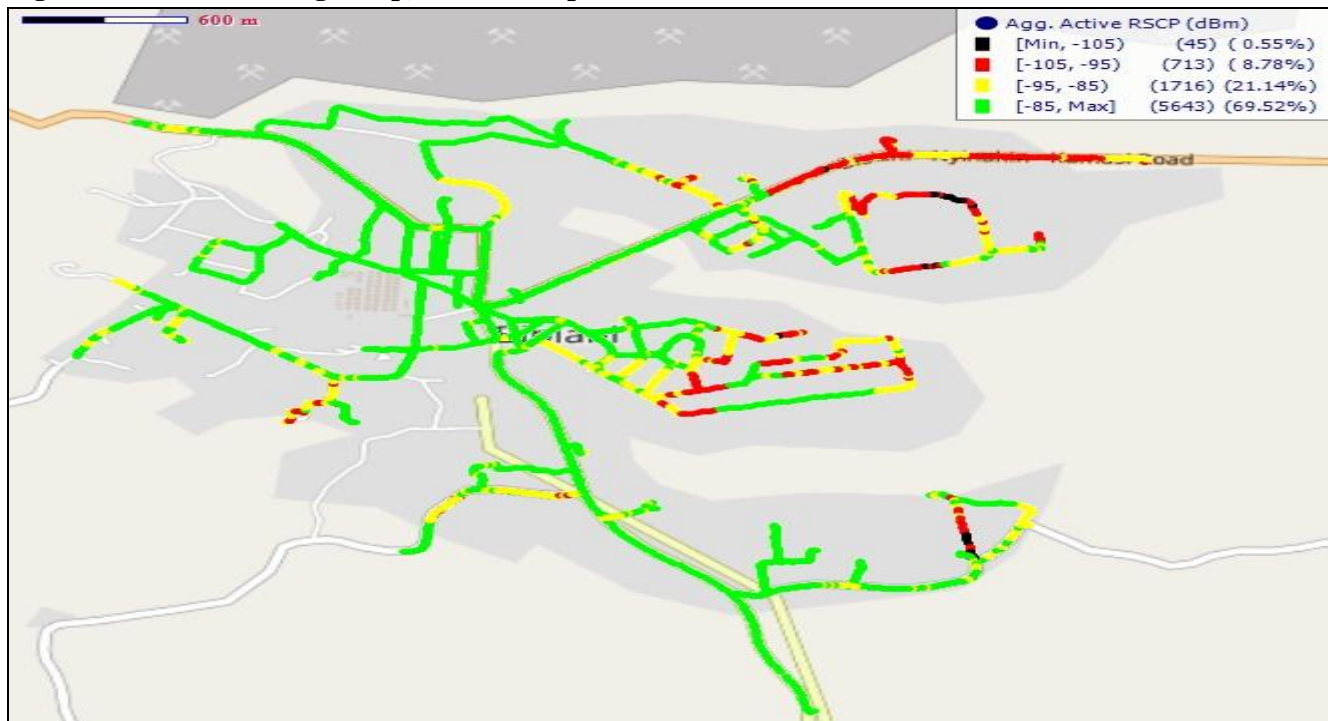
Fig 18– Glo 3G Coverage Map, Axim- September 2016



Remarks: Fair 3G coverage in and around Axim that needs to be improved.

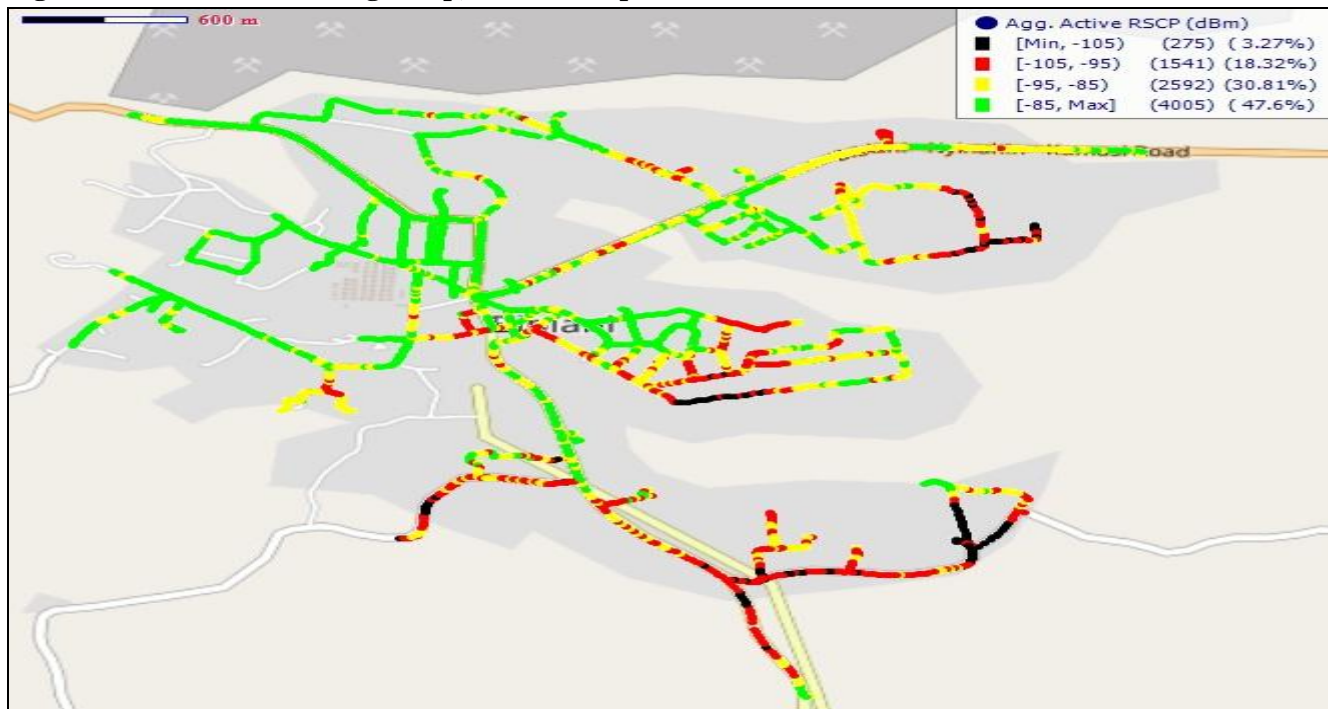
COVERAGE AT BIBIANI

Fig 19- MTN 3G Coverage Map, Bibiani - September 2016



Remarks: Good 3G coverage at Bibiani however requires improvement.

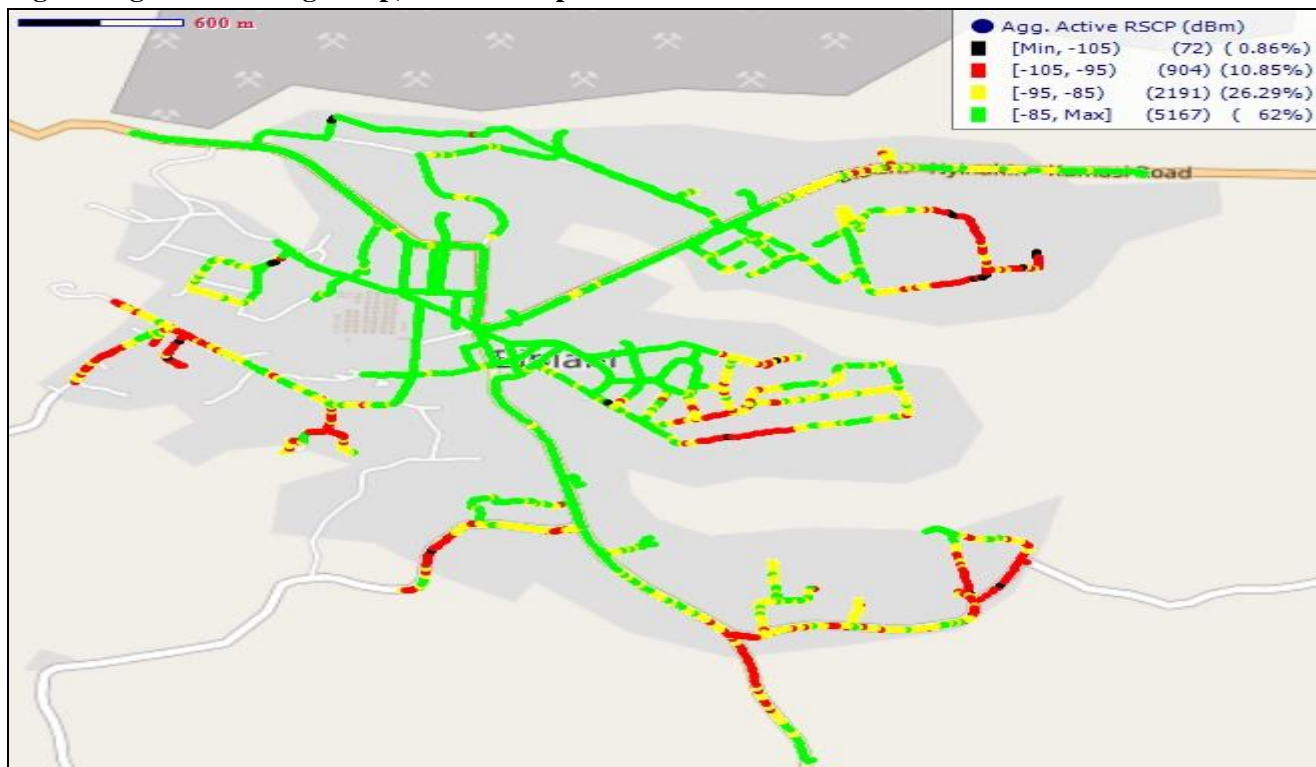
Fig 20- Vodafone 3G Coverage Map, Bibiani - September 2016



Remarks: Fair 3G coverage in and around Bibiani which needs to be improved.

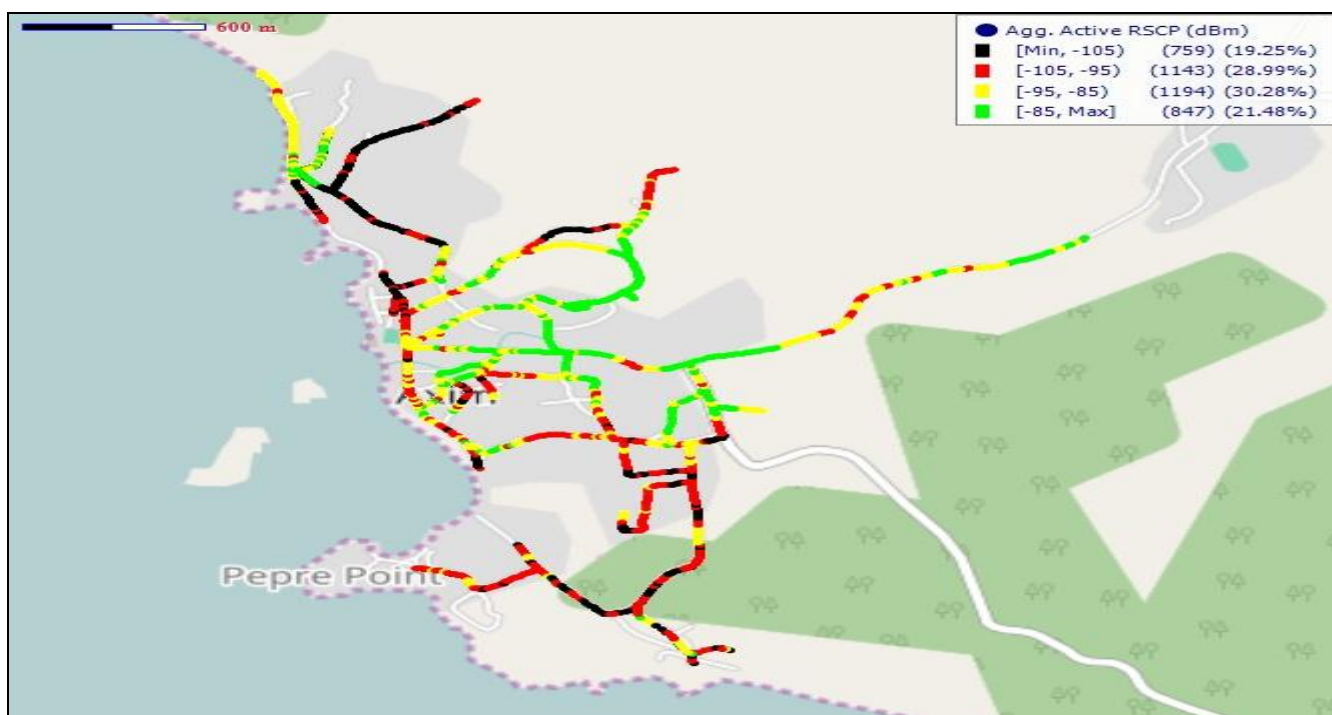
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Fig 21- Tigo 3G Coverage Map, Bibiani - September 2016



Remarks: Good 3G coverage in Bibiani however improvement is required

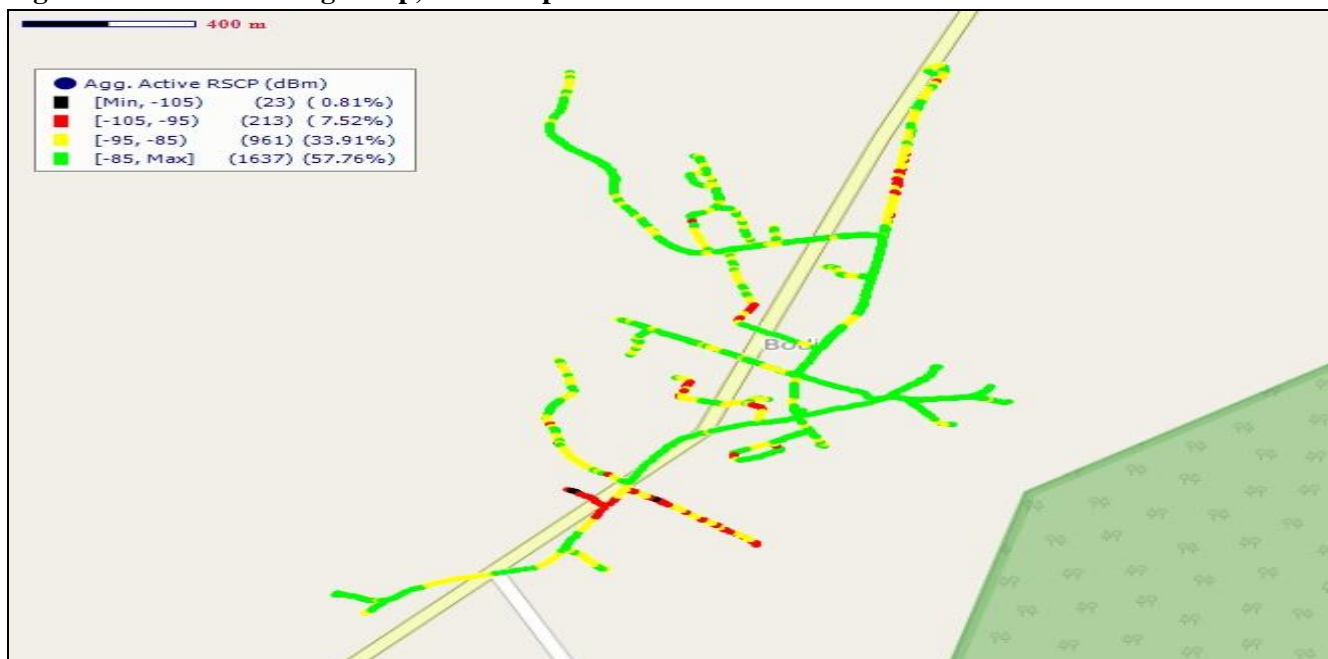
Fig 22- Airtel 3G Coverage Map, Bibiani - September 2016



Remarks: Fair 3G Coverage at Bibiani which needs to be improved

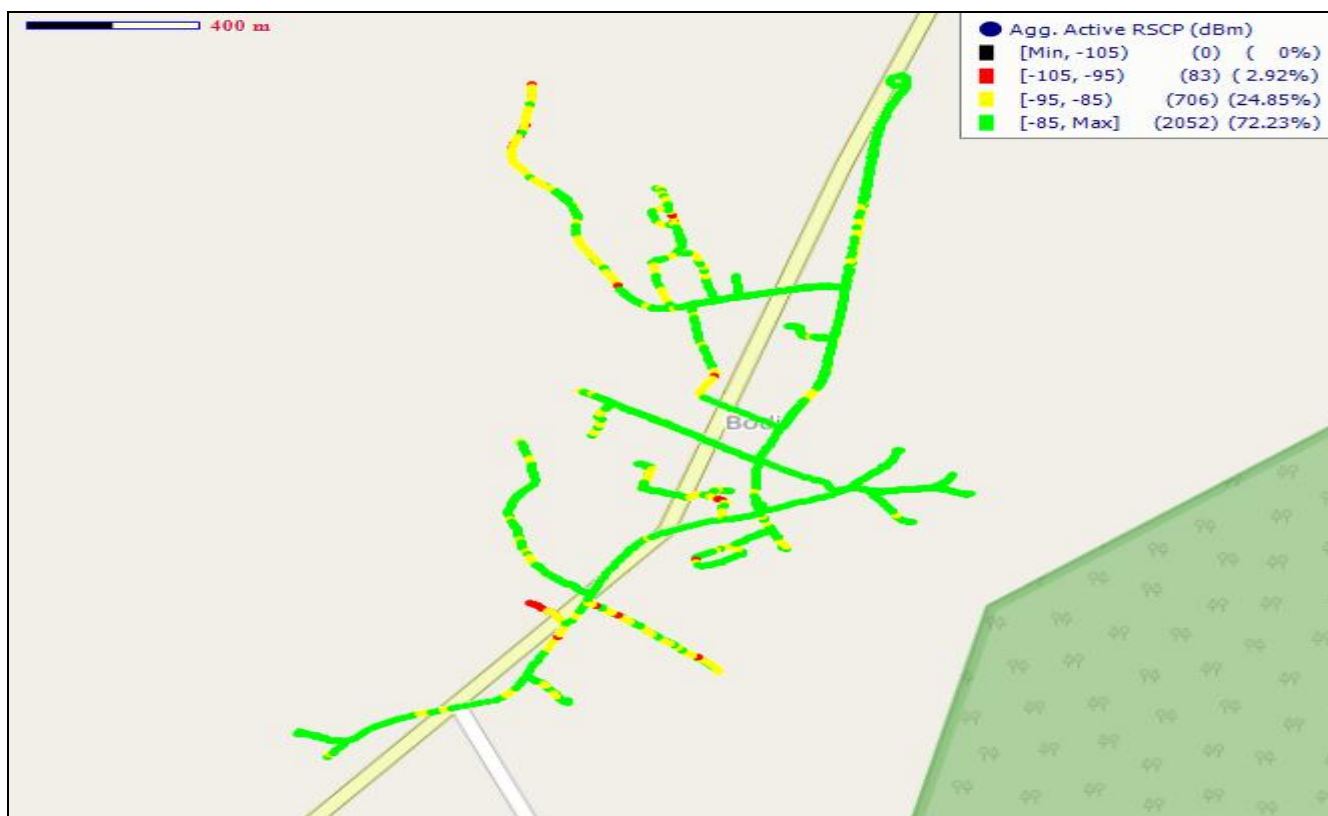
COVERAGE AT BODI

Fig 23 - MTN 3G Coverage Map, Bodi - September 2016



Remarks: Good 3G coverage at Bodi.

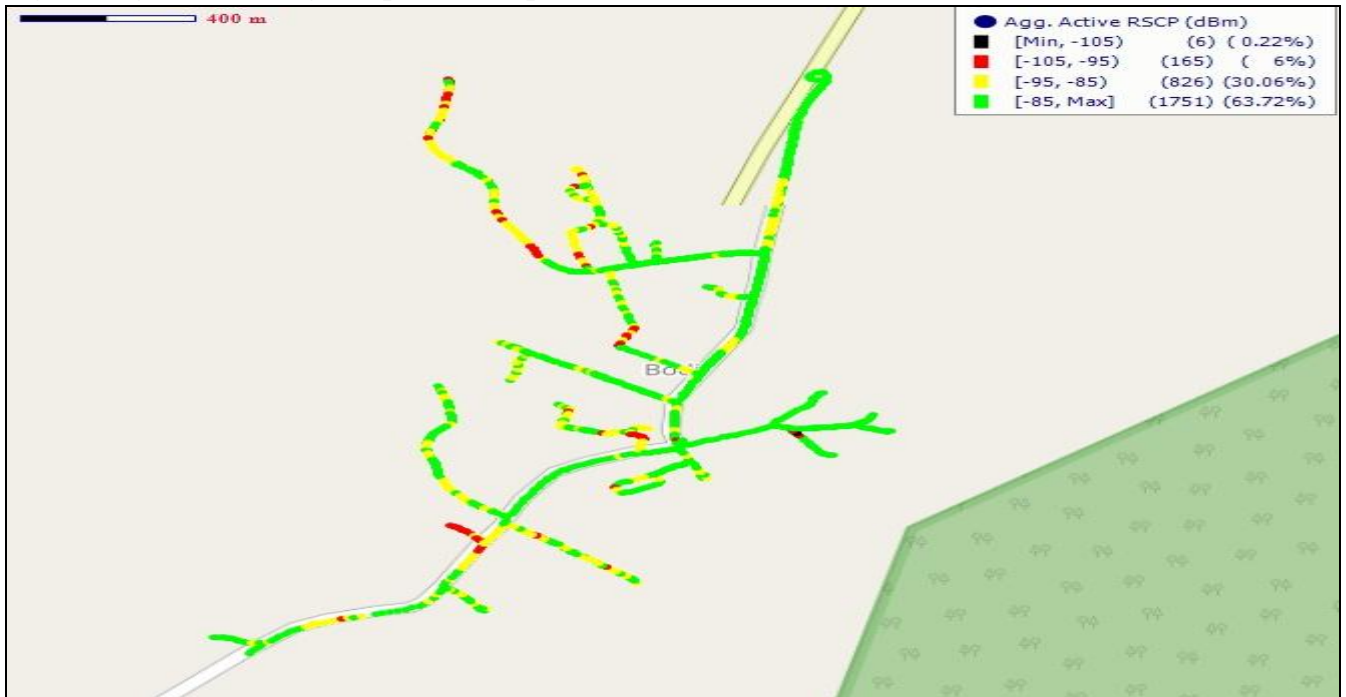
Fig 24- Vodafone 3G Coverage Map, Bodi - September 2016



Remarks: Good 3G coverage in Bodi

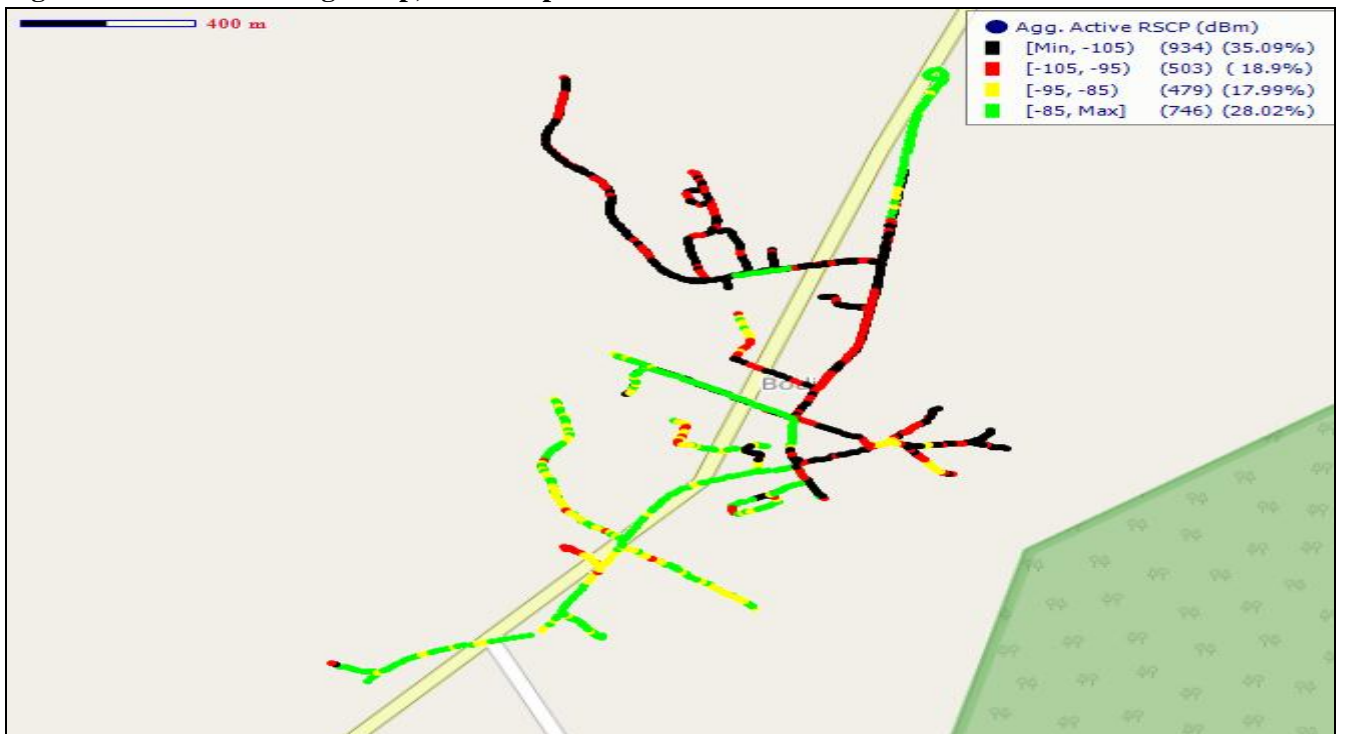
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Fig 25– Tigo 3G Coverage Map, Bodi - September 2016



Remarks: Poor 3G coverage at Sefwi Bodi. Major improvement is required.

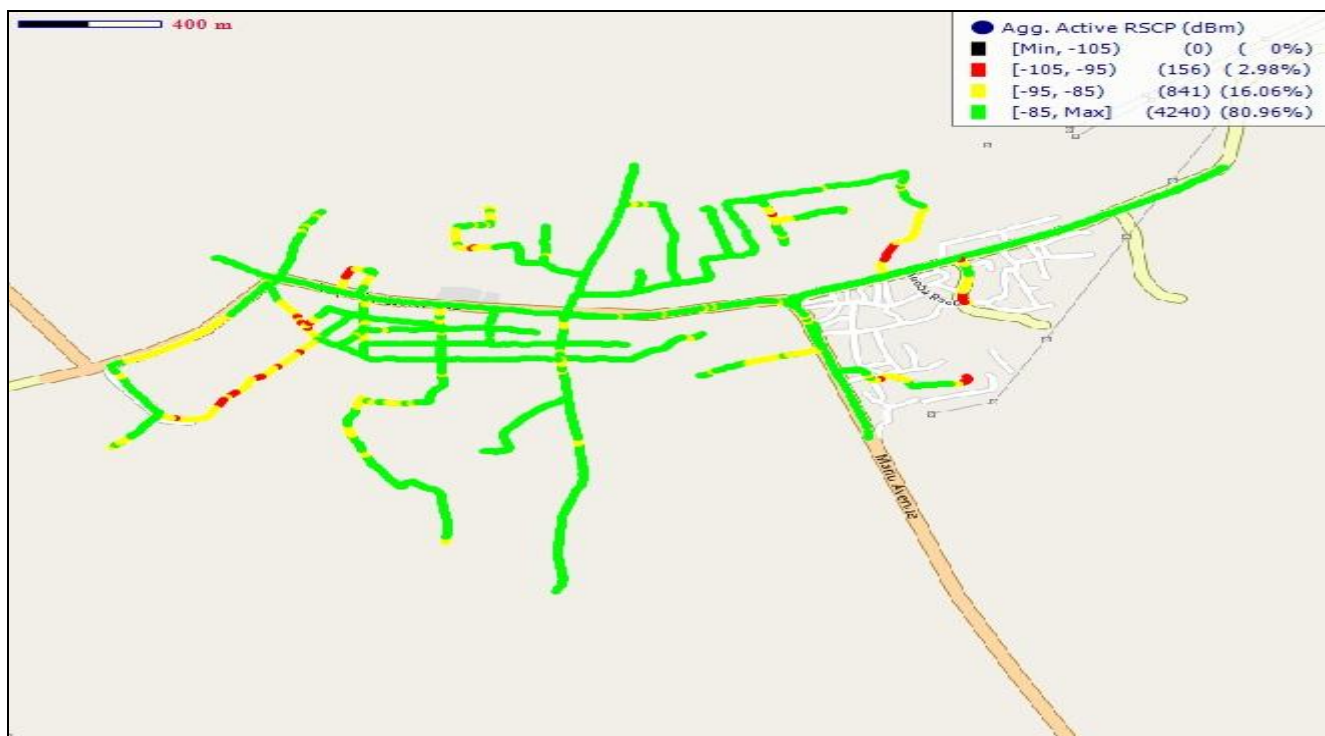
Fig 26– Airtel 3G Coverage Map, Bodi - September 2016



Remarks: Fair 3G coverage at Bodi which needs to be improved

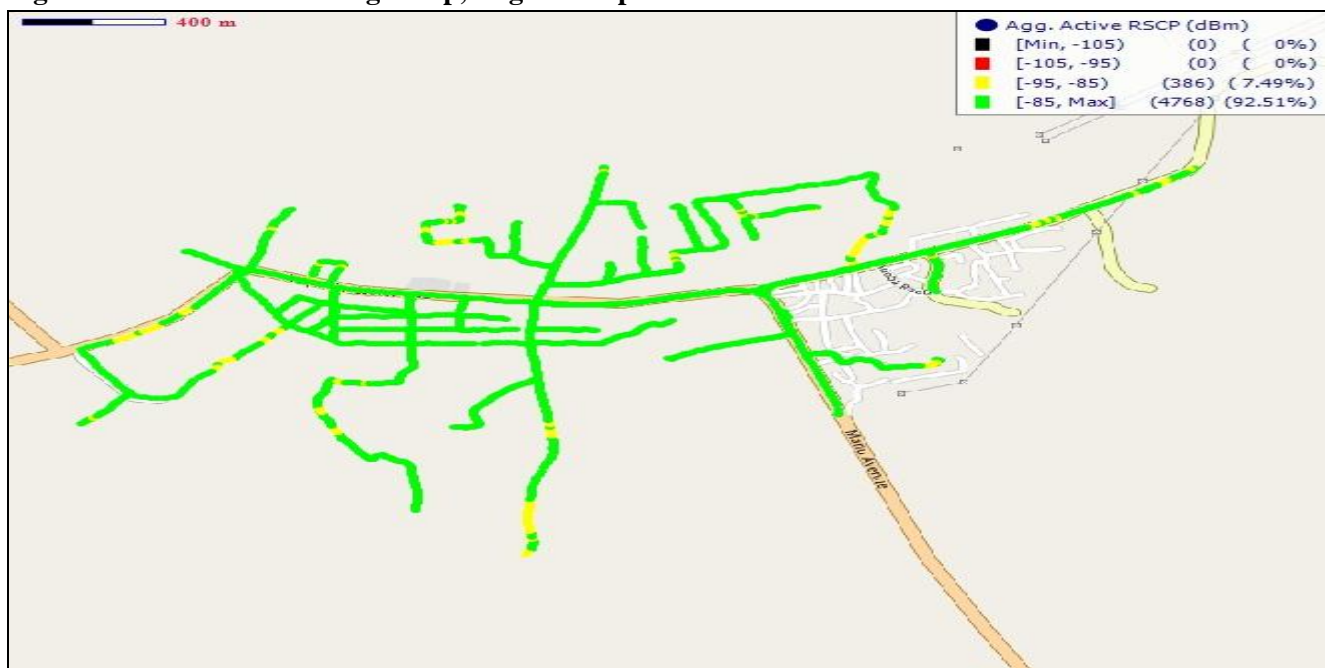
COVERAGE AT BOGOSO

Fig 27- MTN 3G Coverage Map, Bogoso - September 2016



Remarks: Good 3G coverage at Bogoso

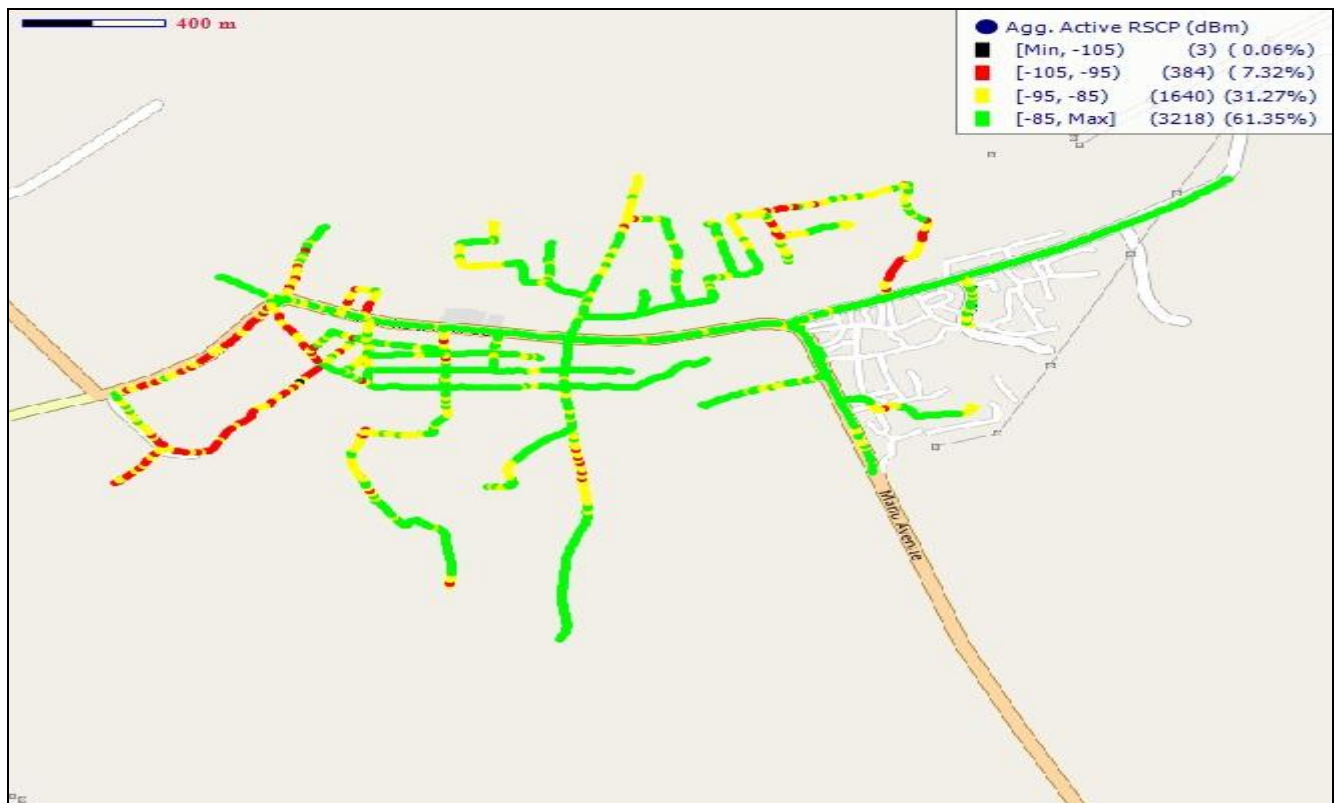
Fig 28- Vodafone 3G Coverage Map, Bogoso - September 2016



Remarks: Good 3G coverage in Bogoso

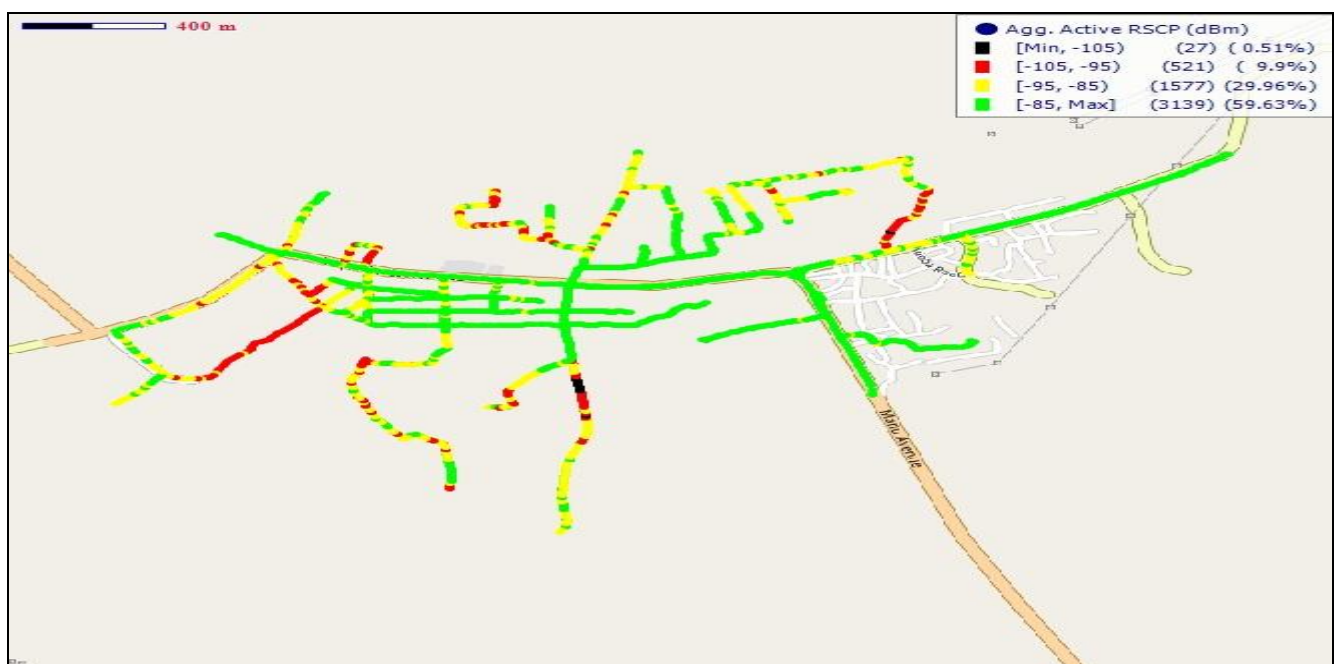
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Fig 29– Tigo 3G Coverage Map, Bogoso - September 2016



Remarks: Good 3G coverage in and around Bogoso which needs to be improved

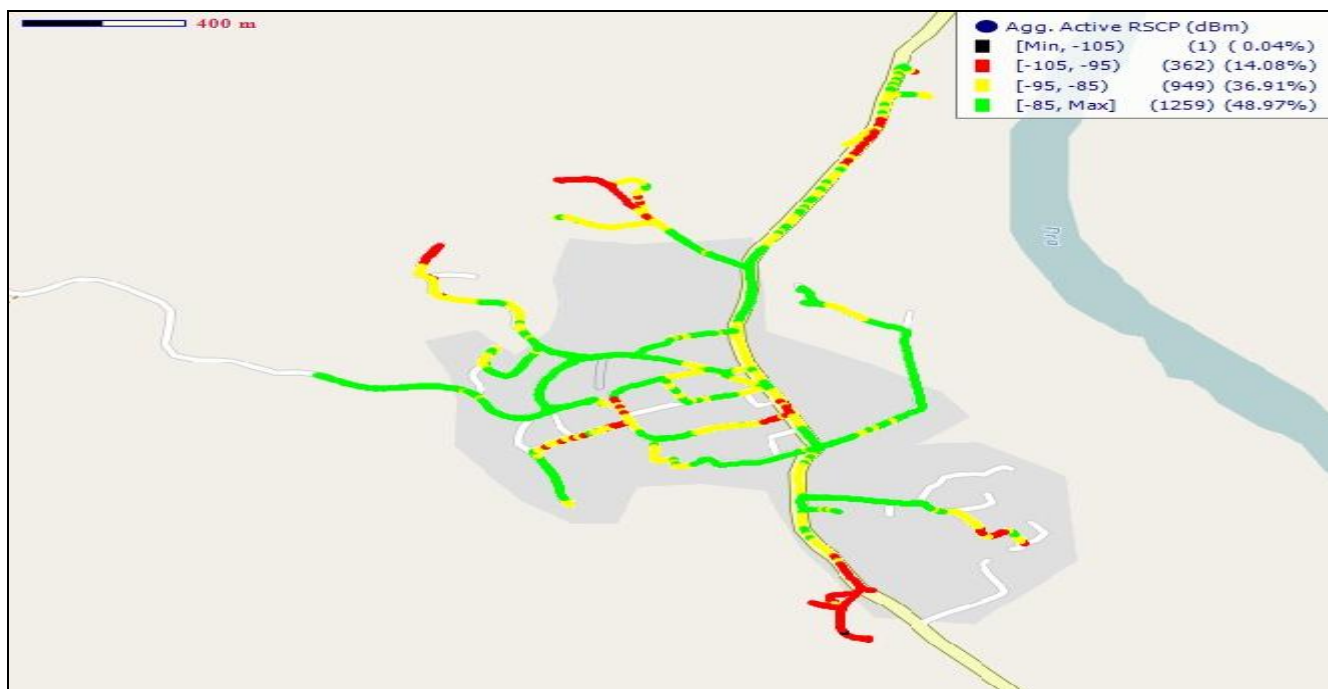
Fig 30- Airtel 3G Coverage Map, Bogoso - September 2016



Remarks: Good 3G coverage at Bogoso however improvement is required

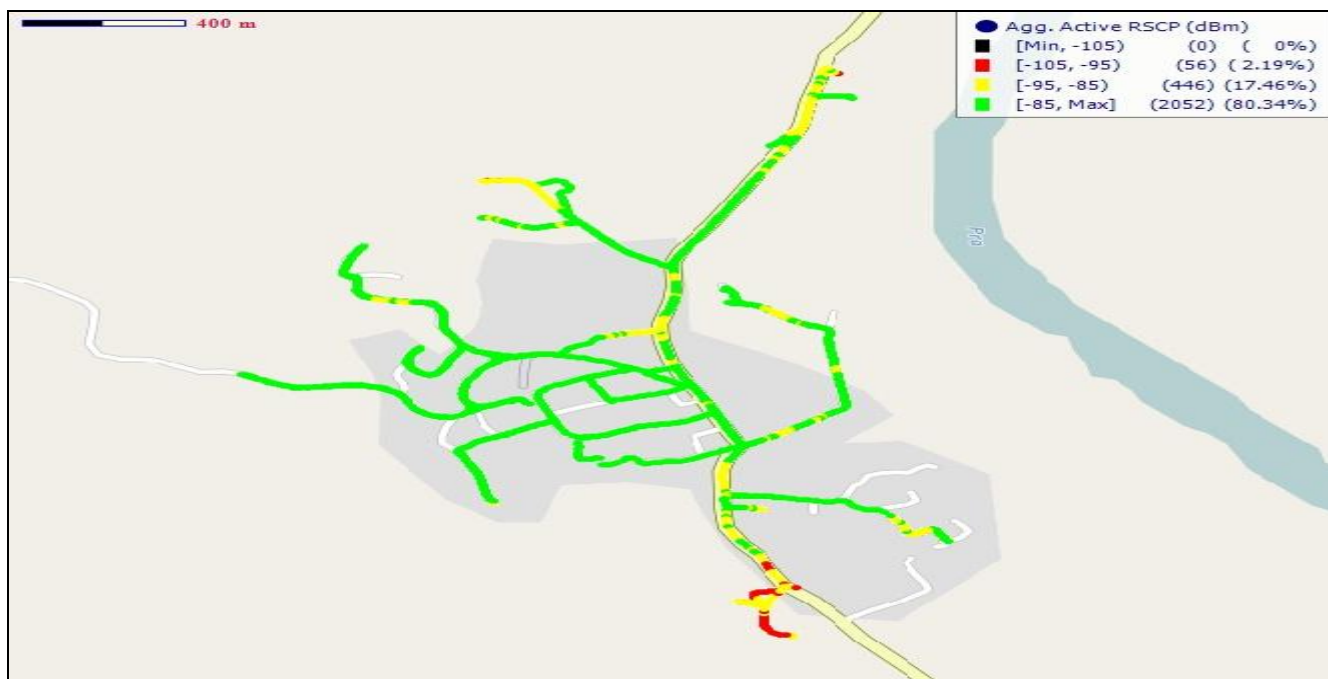
COVERAGE AT DABOASE

Fig 31 - MTN 3G Coverage Map, Daboase - September 2016



Remarks: Good 3G coverage at Daboase however improvement is required

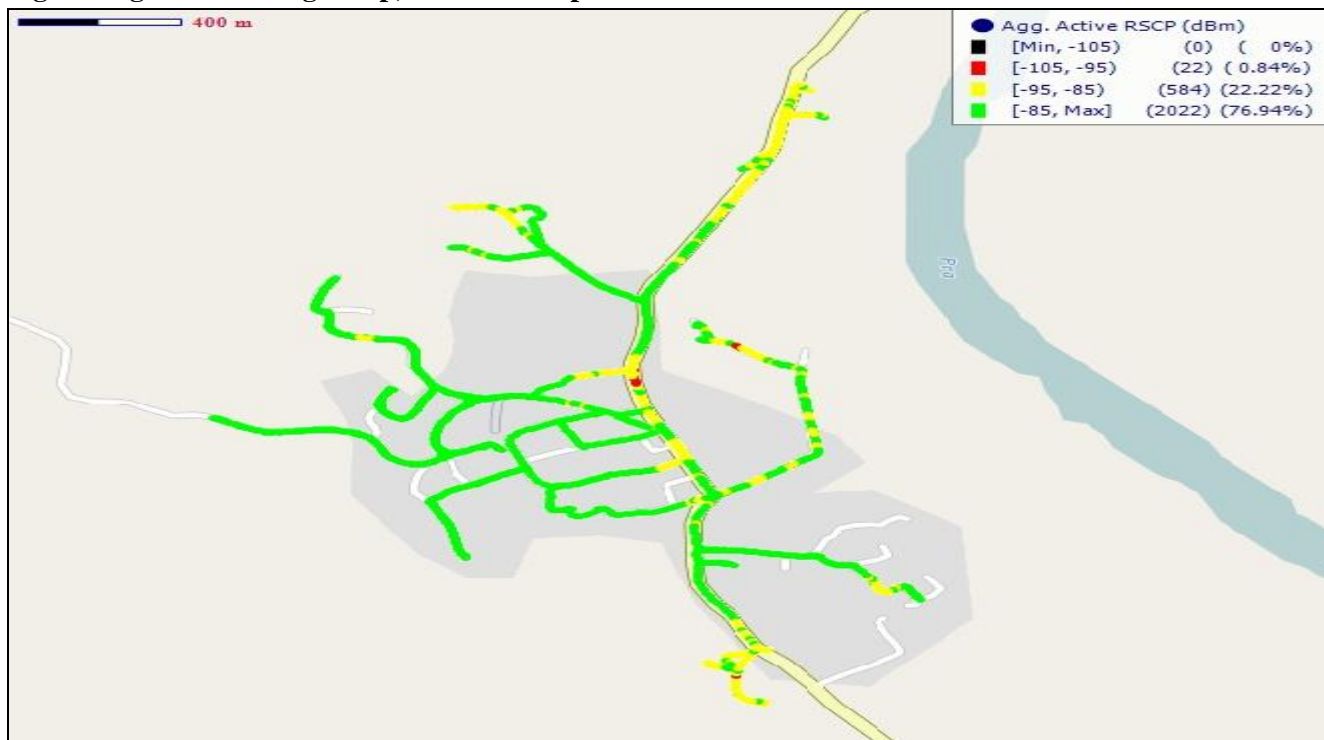
Fig 32- Vodafone 3G Coverage Map, Daboase - September 2016



Remarks: Good 3G coverage Daboase

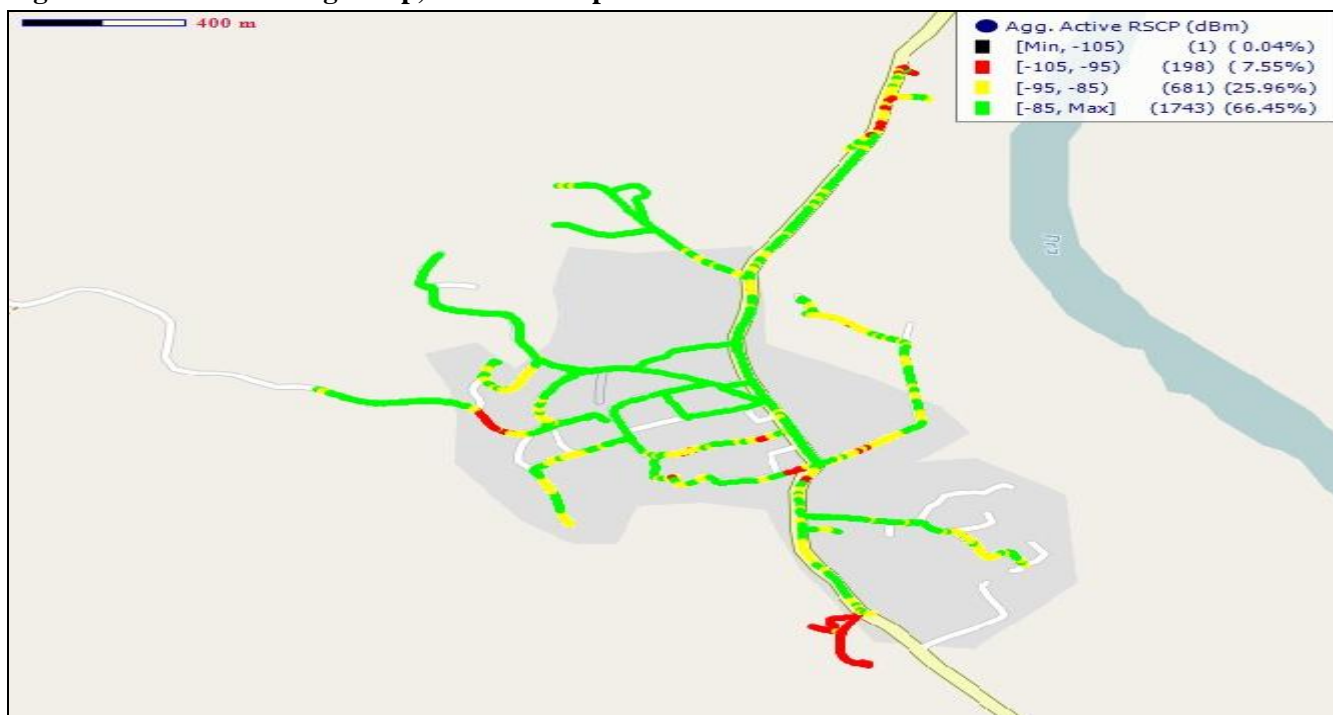
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Fig 33- Tigo 3G Coverage Map, Daboase - September 2016



Remarks: Good 3G coverage in Daboase

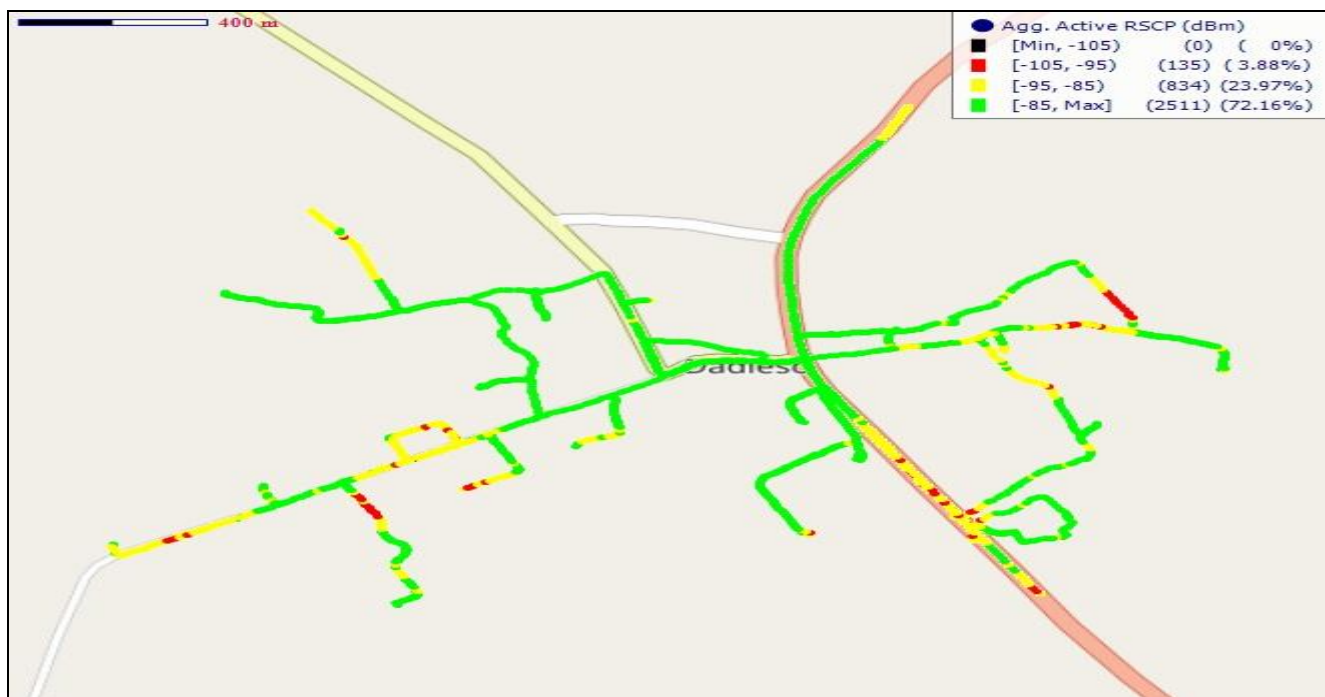
Fig 34- Airtel 3G Coverage Map, Daboase - September 2016



Remarks: Good 3G coverage at Daboase

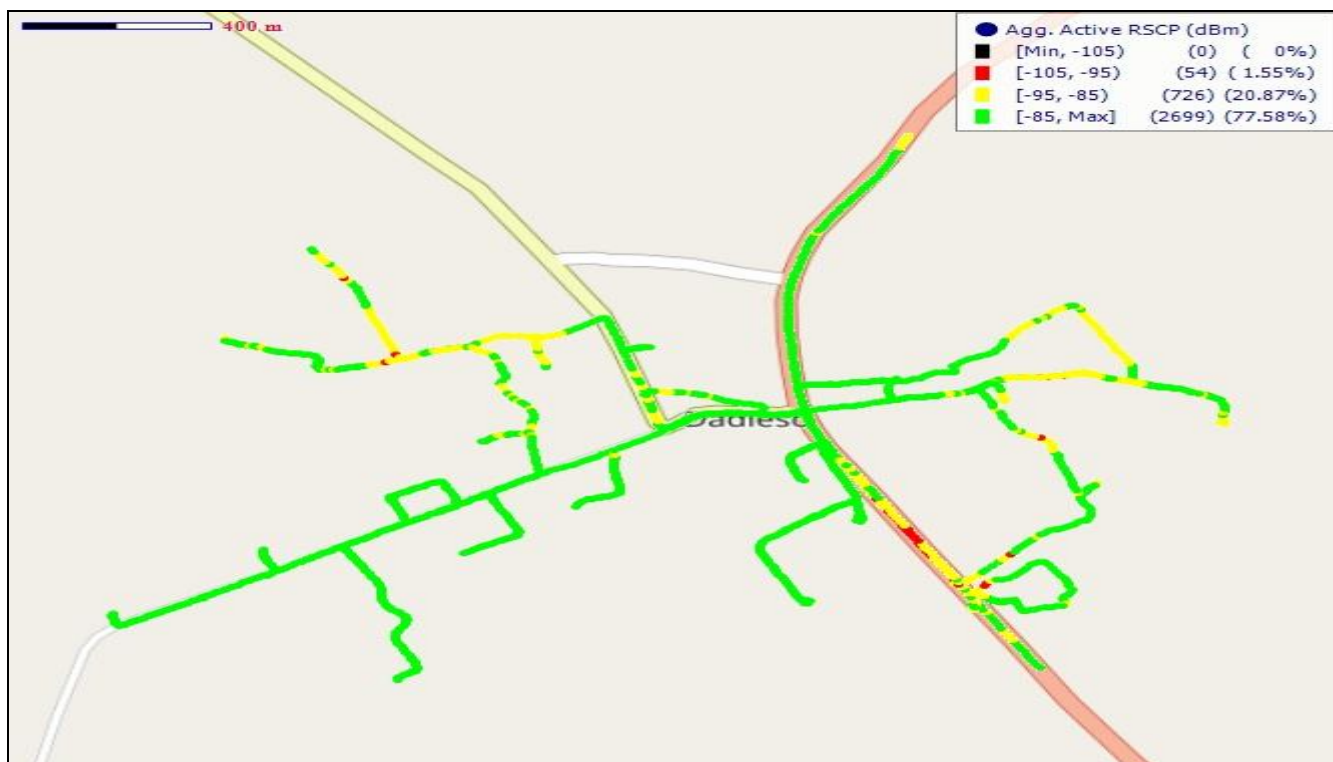
COVERAGE AT DADIESO

Fig 35- MTN 3G Coverage Map, Dadieso – September 2016



Remarks: Good 3G coverage at Dadieso.

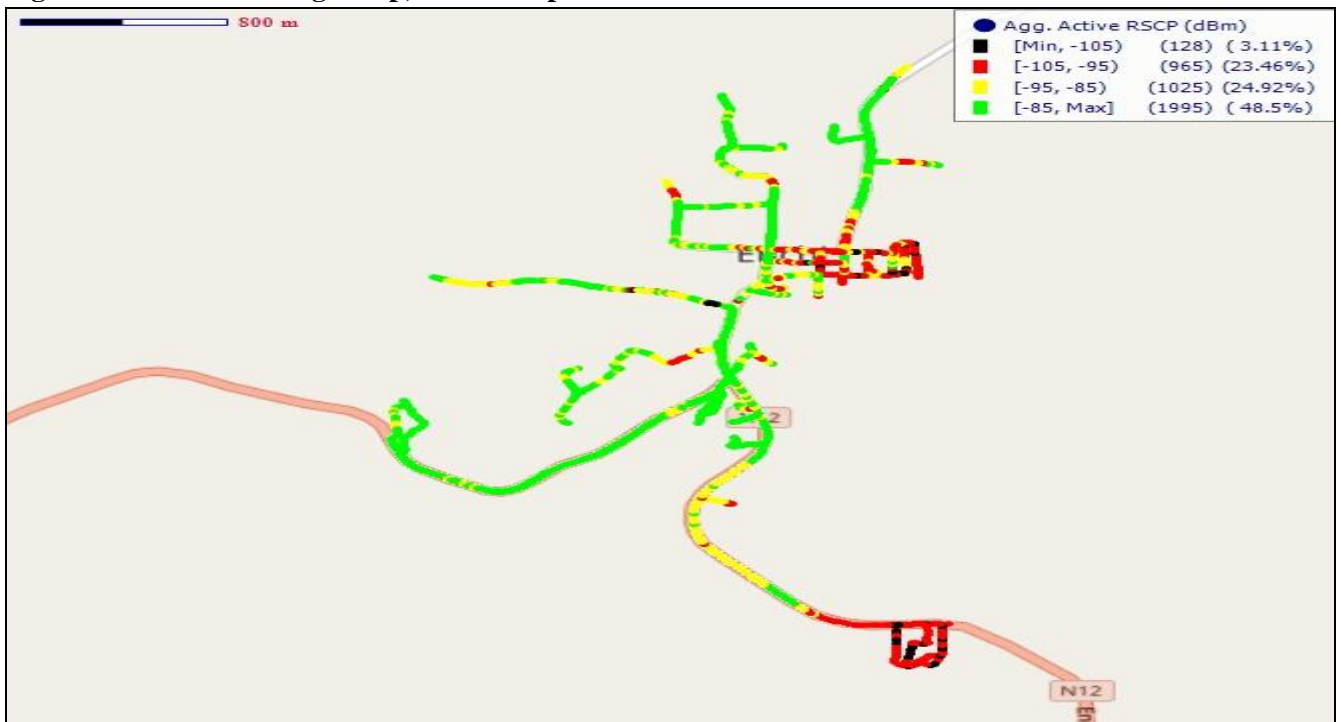
Fig 36- Vodafone 3G Coverage Map, Dadieso – September 2016



Remarks: Good 3G coverage in Dadieso

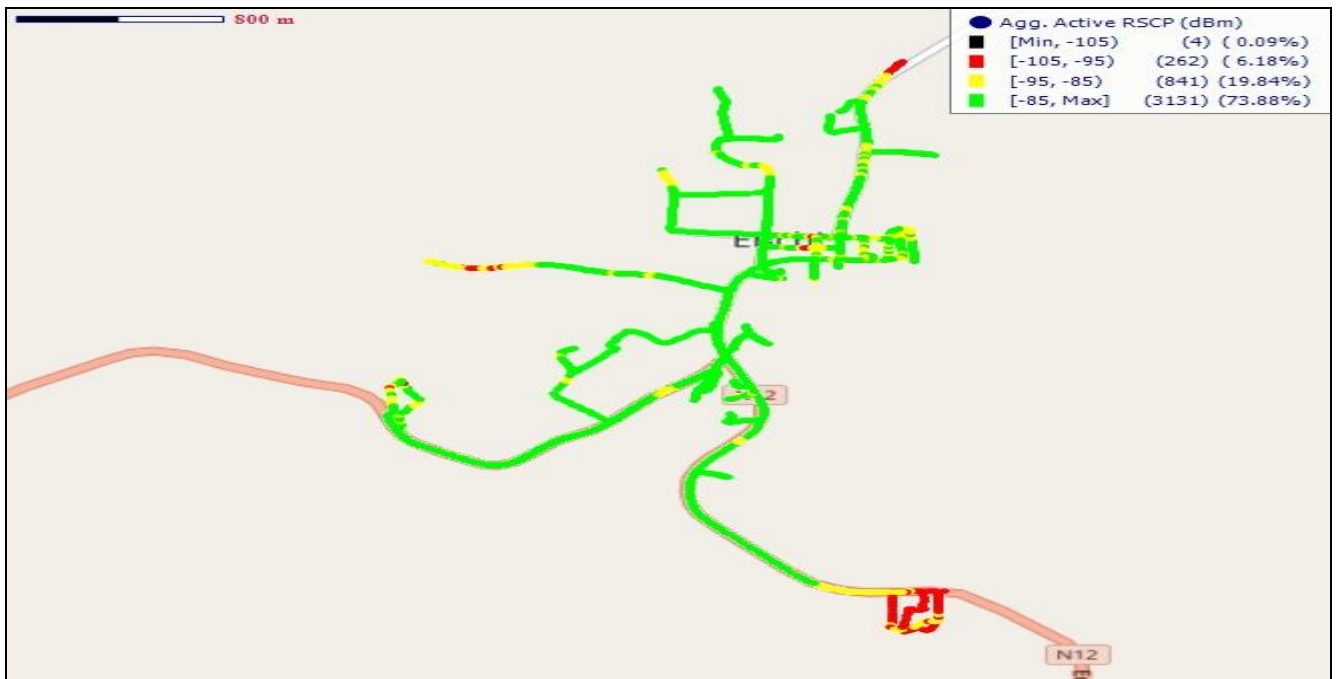
COVERAGE AT ENCHI

Fig 37- MTN 3G Coverage Map, Enchi - September 2016



Remarks: Fair 3G coverage at Enchi which needs to be improved

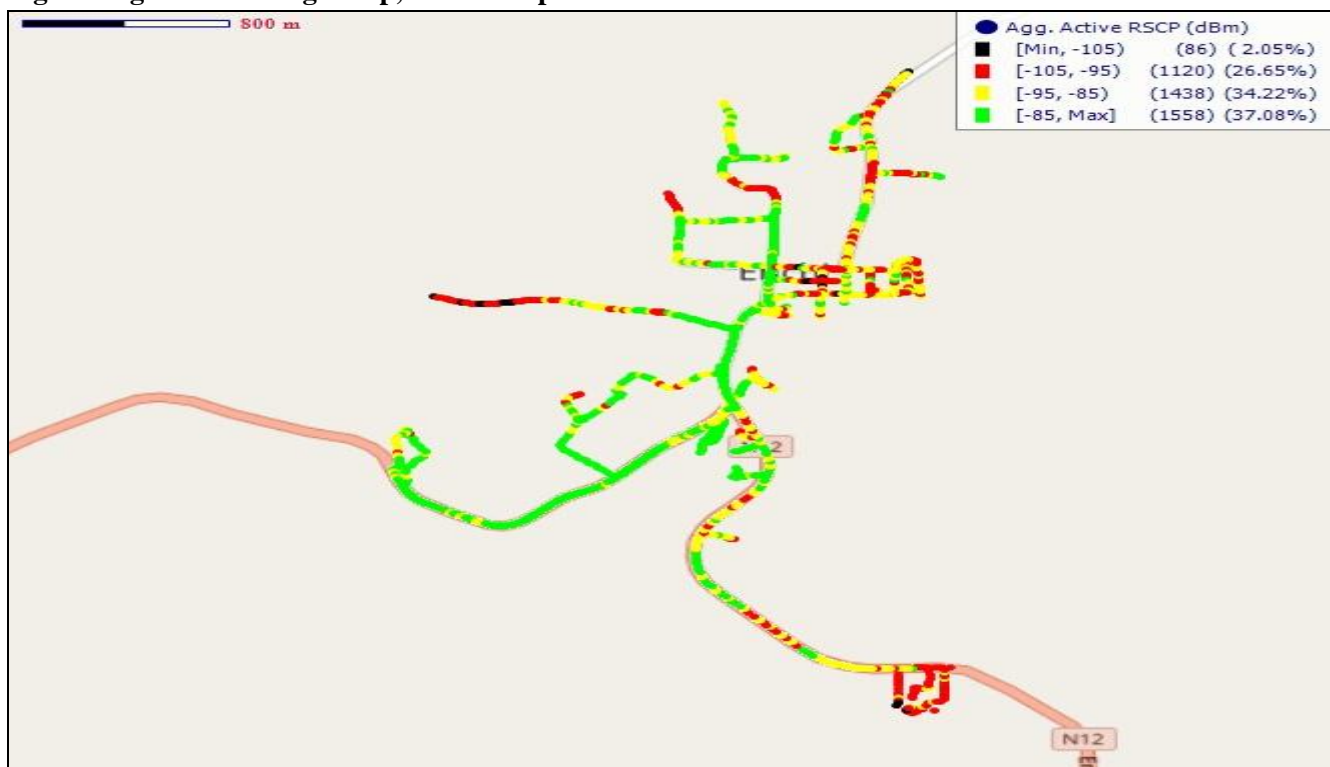
Fig 38- Vodafone 3G Coverage Map, Enchi - September 2016



Remarks: Good 3G coverage in Enchi

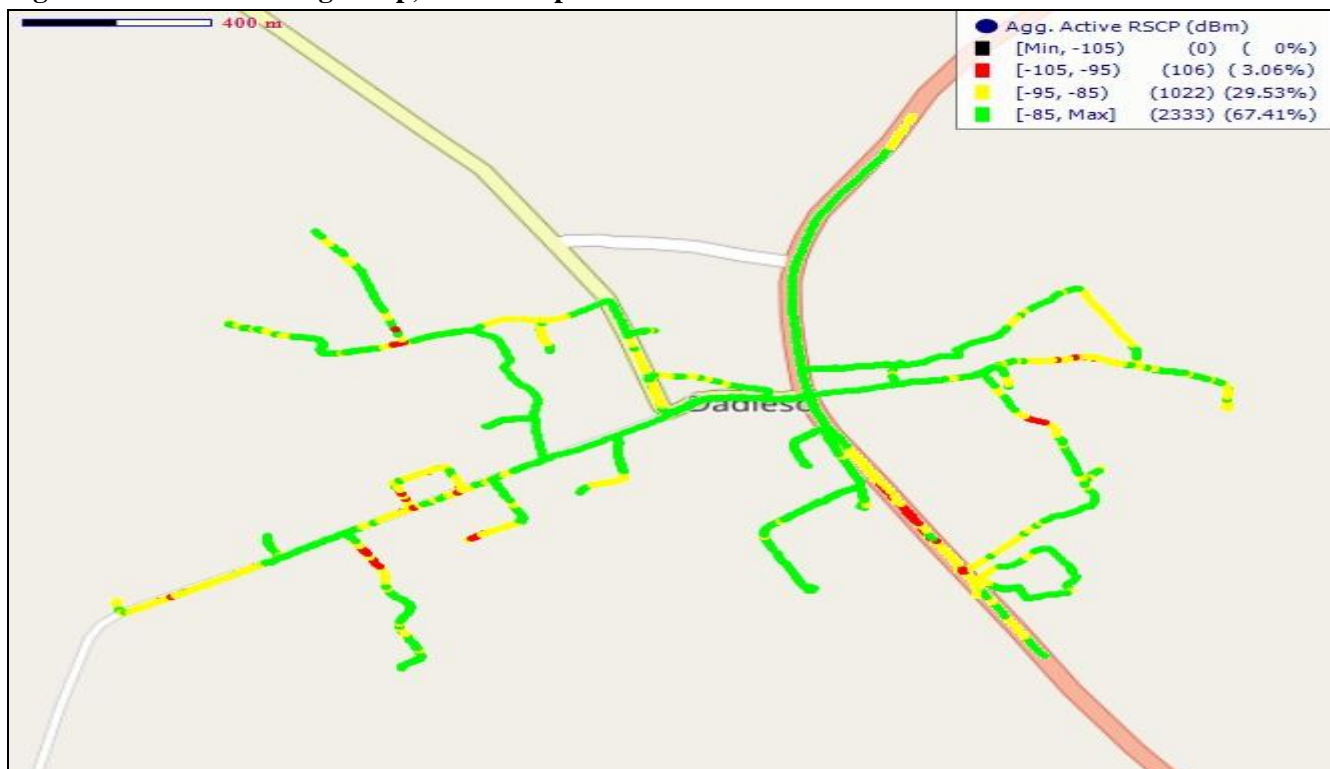
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Fig 39- Tigo 3G Coverage Map, Enchi - September 2016



Remarks: Fair 3G coverage in Enchi however improvement is required

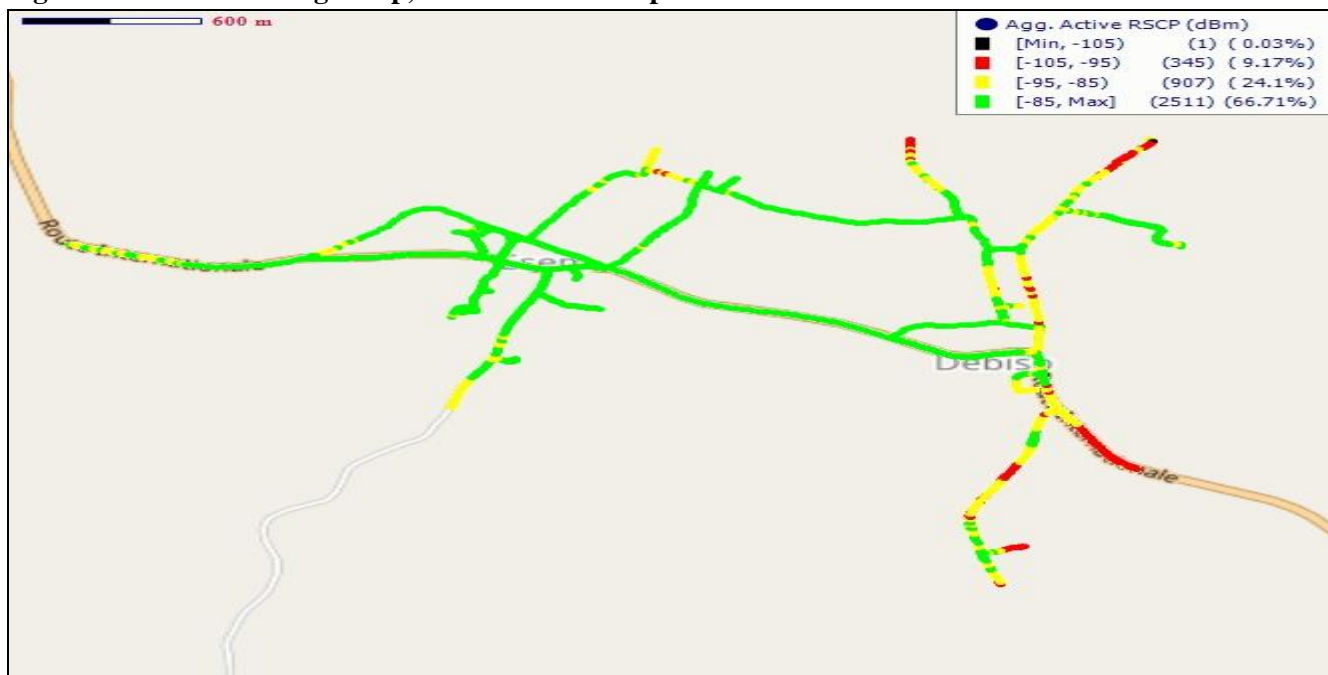
Fig 40- Airtel 3G Coverage Map, Enchi - September 2016



Remarks: Good 3G coverage in Enchi

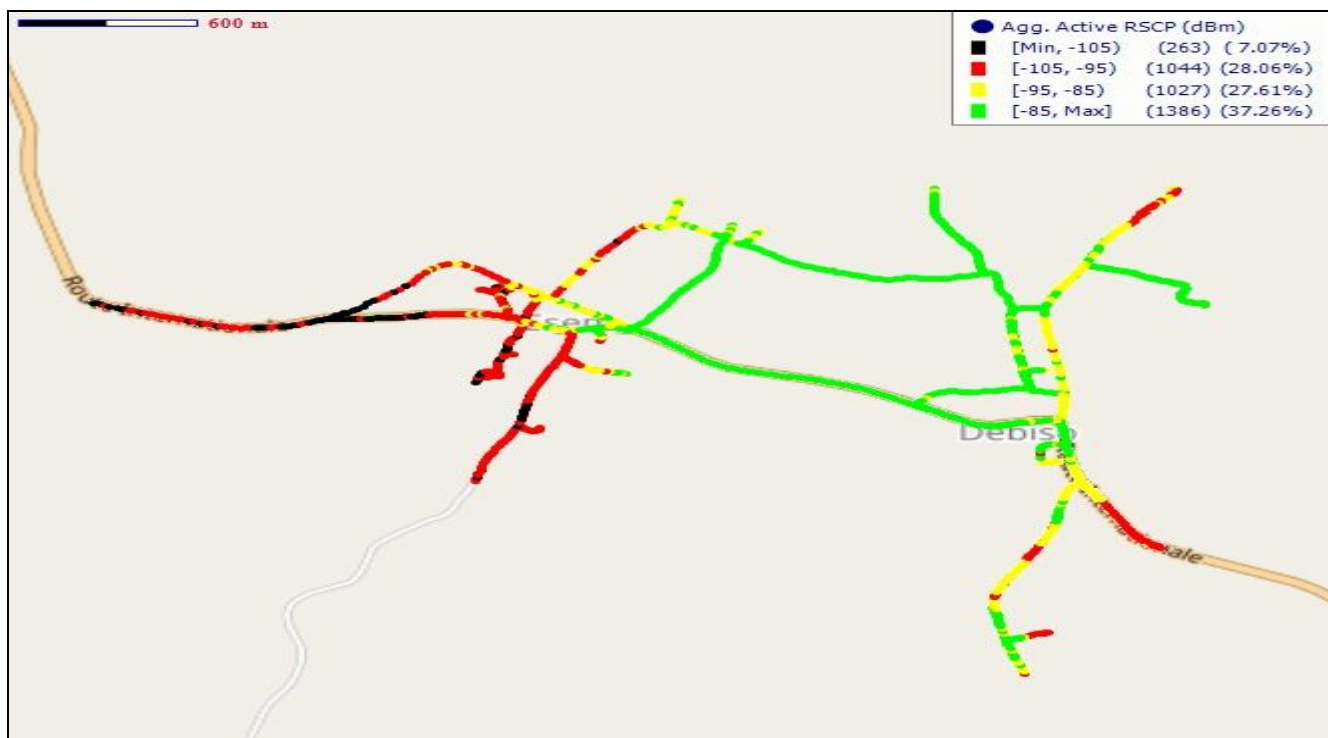
COVERAGE AT ESSAM DEBISO

Fig 41- MTN 3G Coverage Map, Essam Debiso - September 2016



Remarks: Good 3G coverage at Essam Debiso

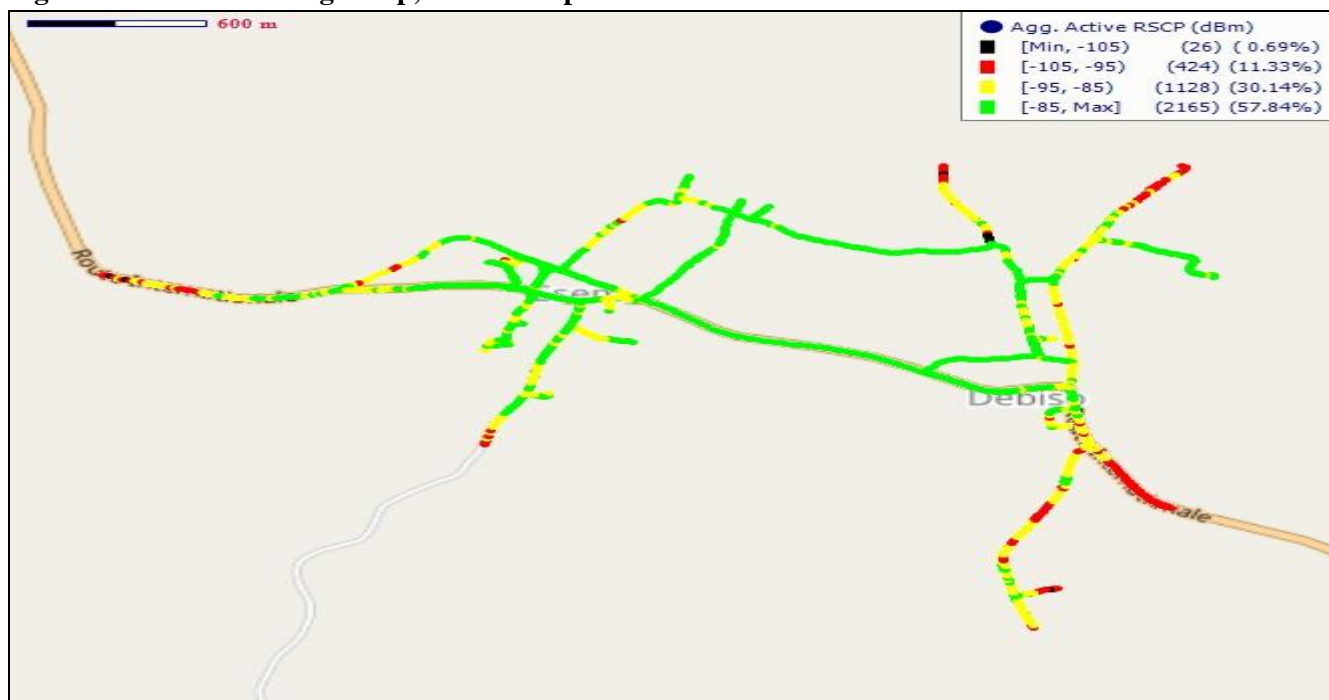
Fig 42- Vodafone 3G Coverage Map, Essam Debiso- September 2016



Remarks: Fair 3G coverage in Essam Debiso which needs to be improved

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Fig 43- Airtel 3G Coverage Map, Essam - September 2016



Remarks: Good 3G coverage in and around Essam however improvement is required

COVERAGE AT HALF-ASSINI

Fig 44- MTN 3G Coverage Map, Half-Assini – September 2016



Remarks: Good 3G coverage in Half-Assini

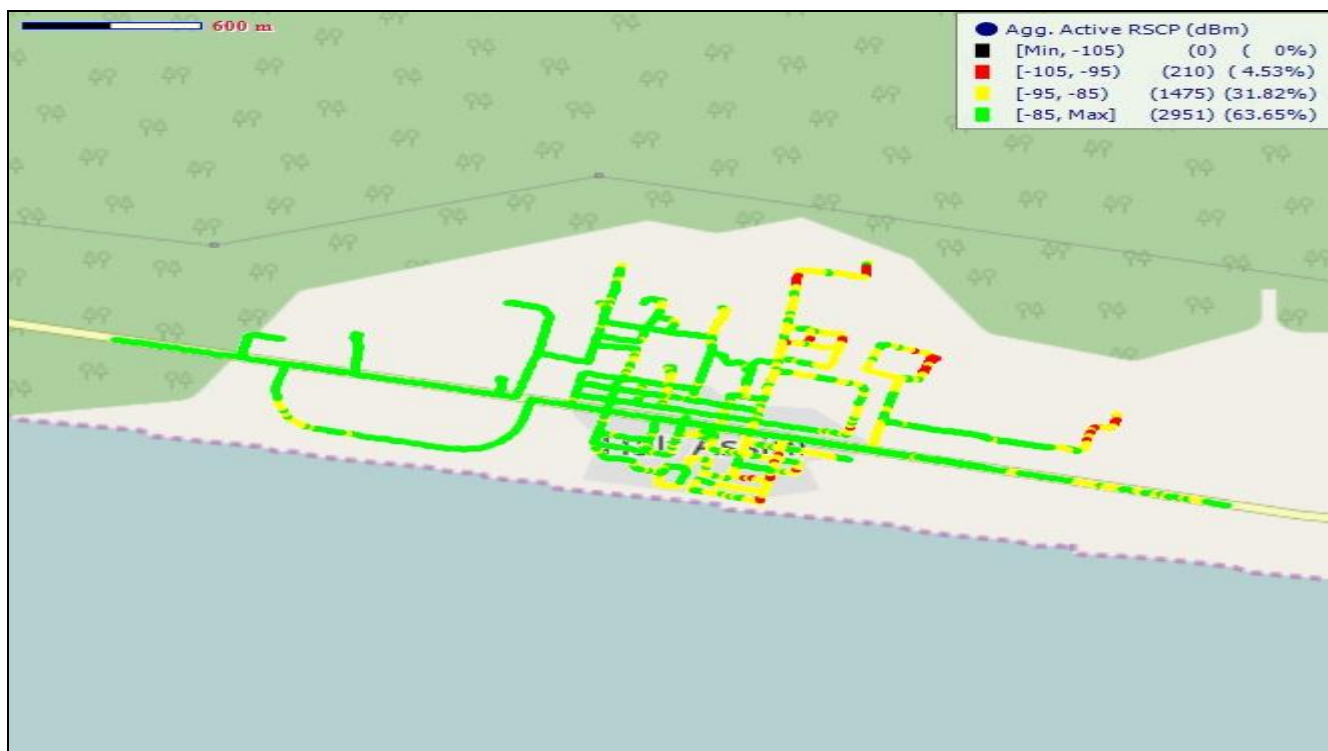
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Fig 45- Vodafone 3G Coverage Map, Half Assini – September 2016



Remarks: Good 3G coverage at Half Assini

Fig 46- Tigo 3G Coverage Map, Half Assini – September 2016



Remarks: Good 3G coverage in and around Half – Assini.

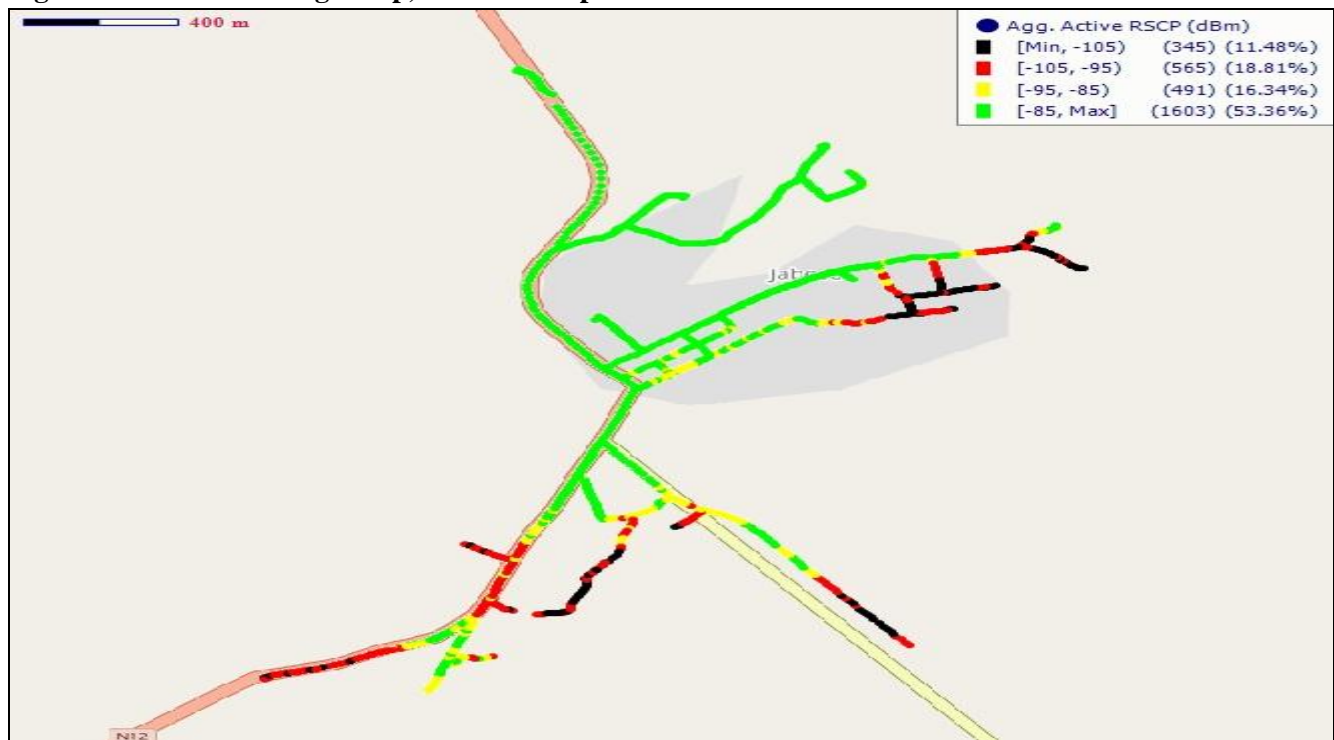
Fig 47- Airtel 3G Coverage Map, Half Assini – September 2016



Remarks: Fair 3G coverage in and around Half-Assini that needs to be improved

COVERAGE AT JUABOSO

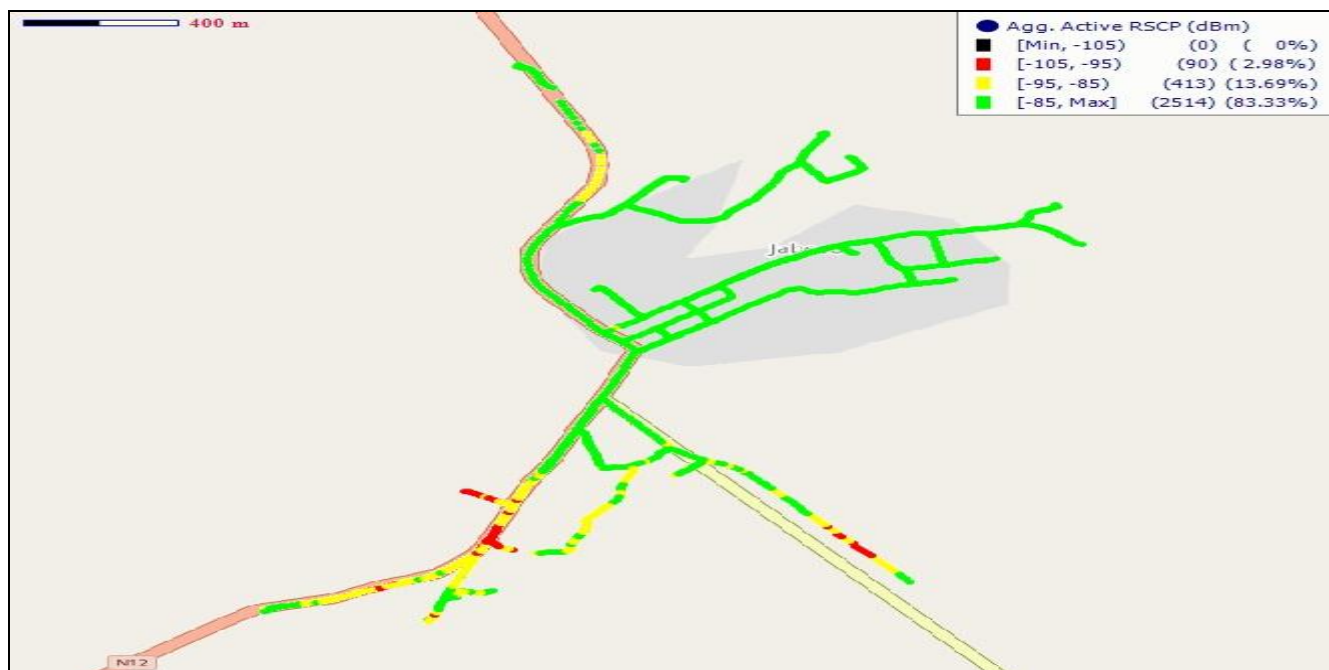
Fig 48- MTN 3G Coverage Map, Juaboso - September 2016



Remarks: Good 3G coverage at Sefwi Juaboso

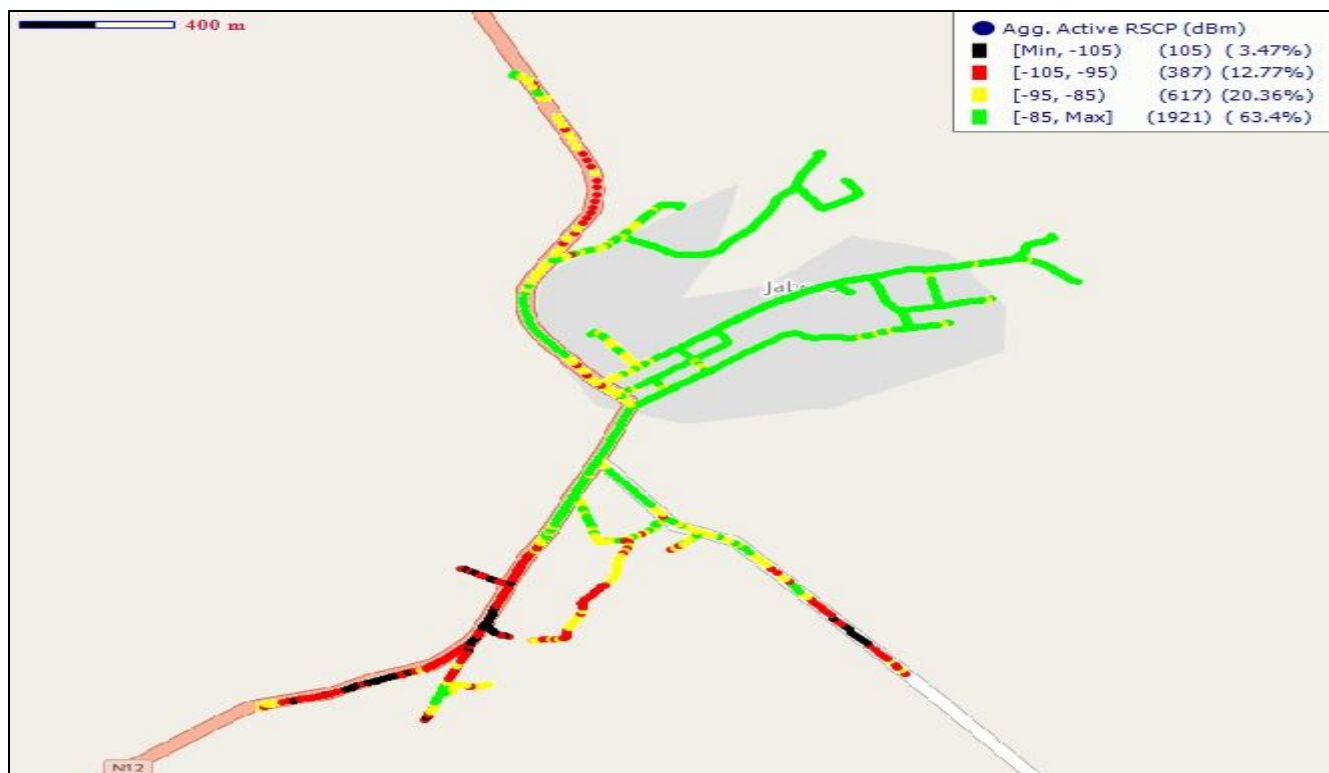
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 49- Vodafone 3G Coverage Map, Juaboso - September 2016



Remarks: Good 3G coverage in Juaboso

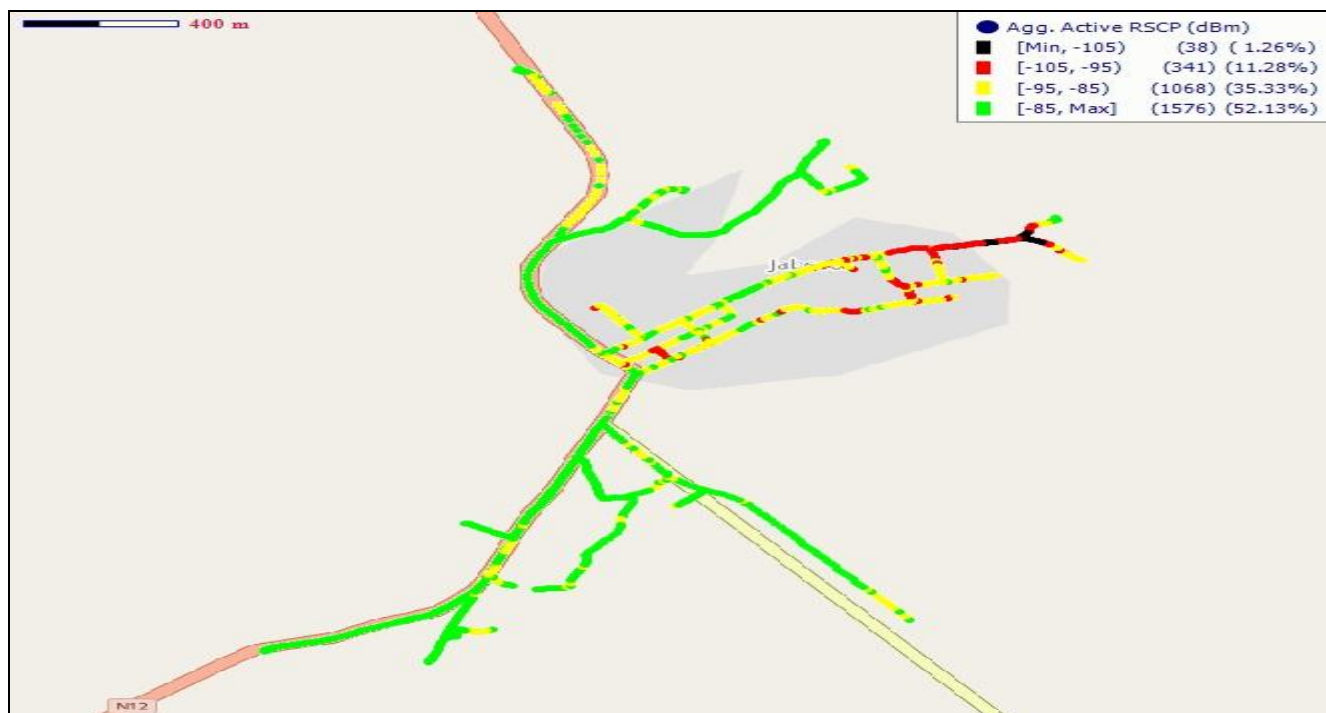
Fig 50- Tigo 3G Coverage Map, Juaboso - September 2016



Remarks: Good 3G coverage in Juaboso however improvement is required

3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

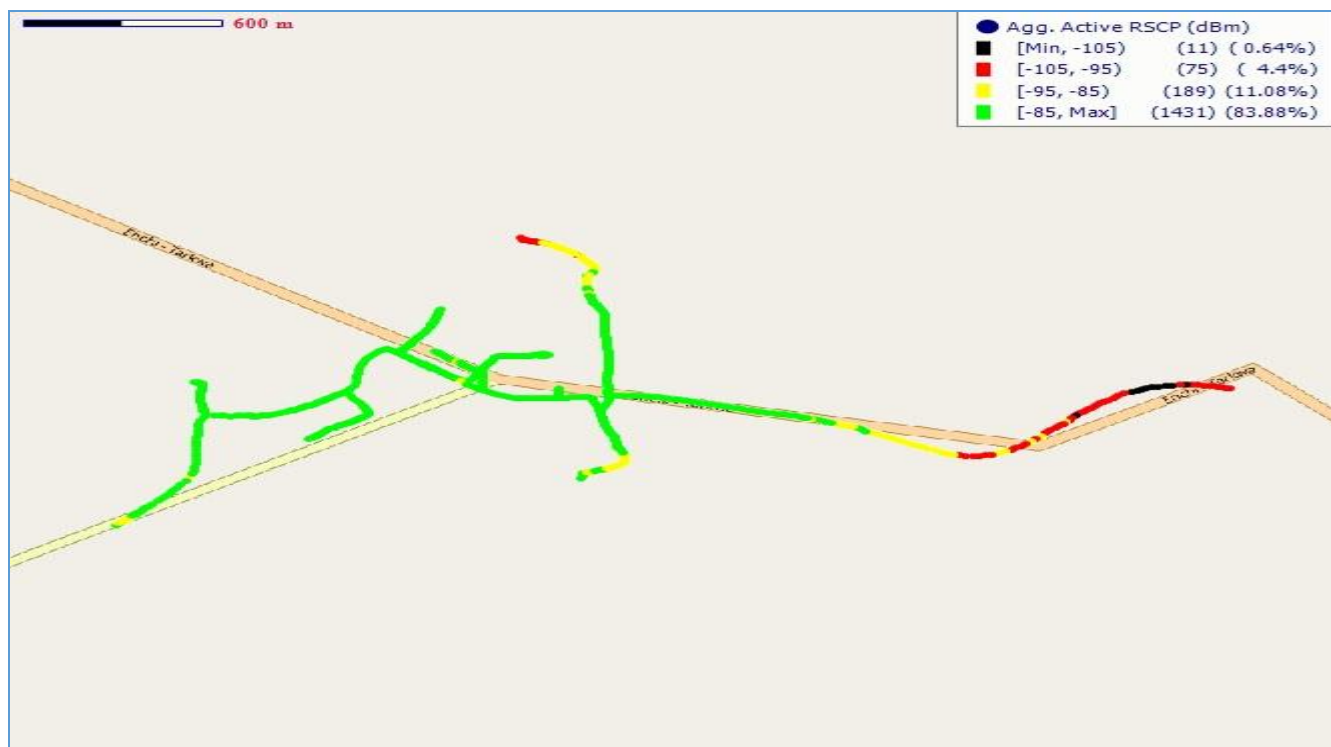
Fig 51- Airtel 3G Coverage Map, Juaboso - September 2016



Remarks: Good 3G coverage at Juaboso however improvement is required

COVERAGE AT MANSO AMENFI

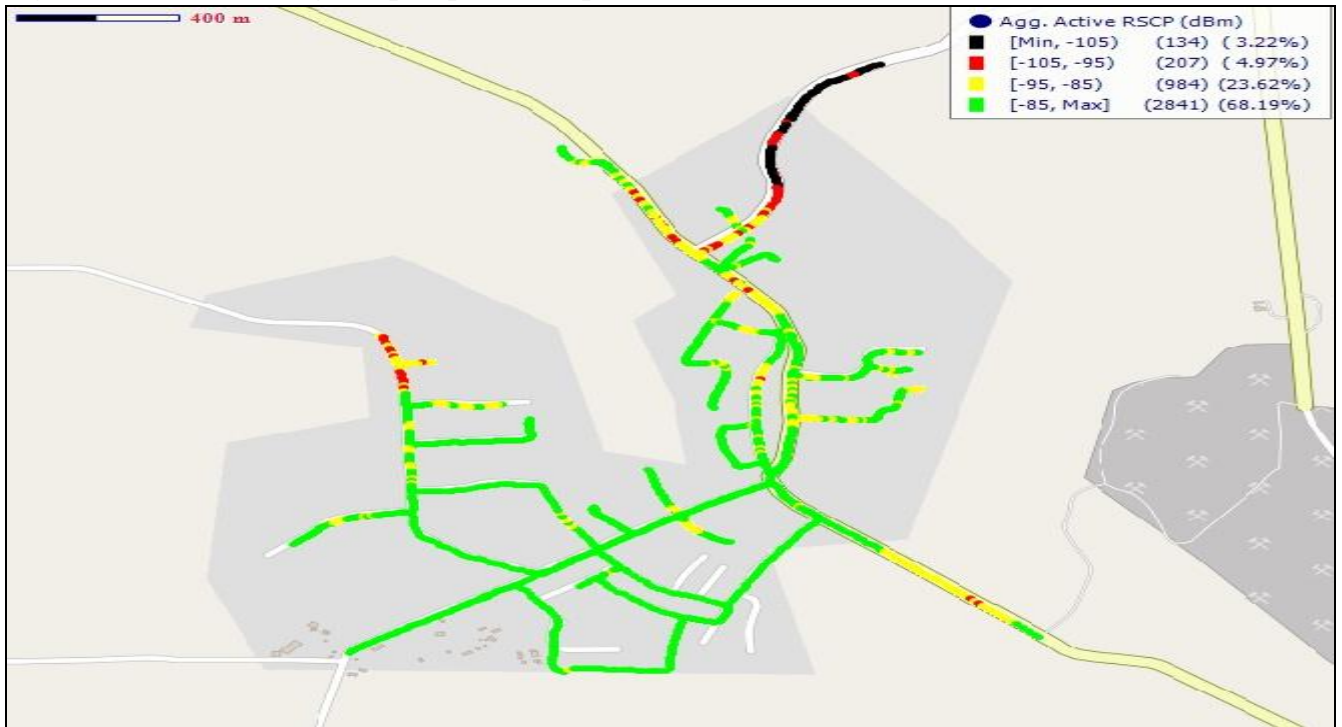
Fig 52: 3G Coverage Plot- Manso Amenfi



Remarks: Good 3G coverage at Manso Amenfi.

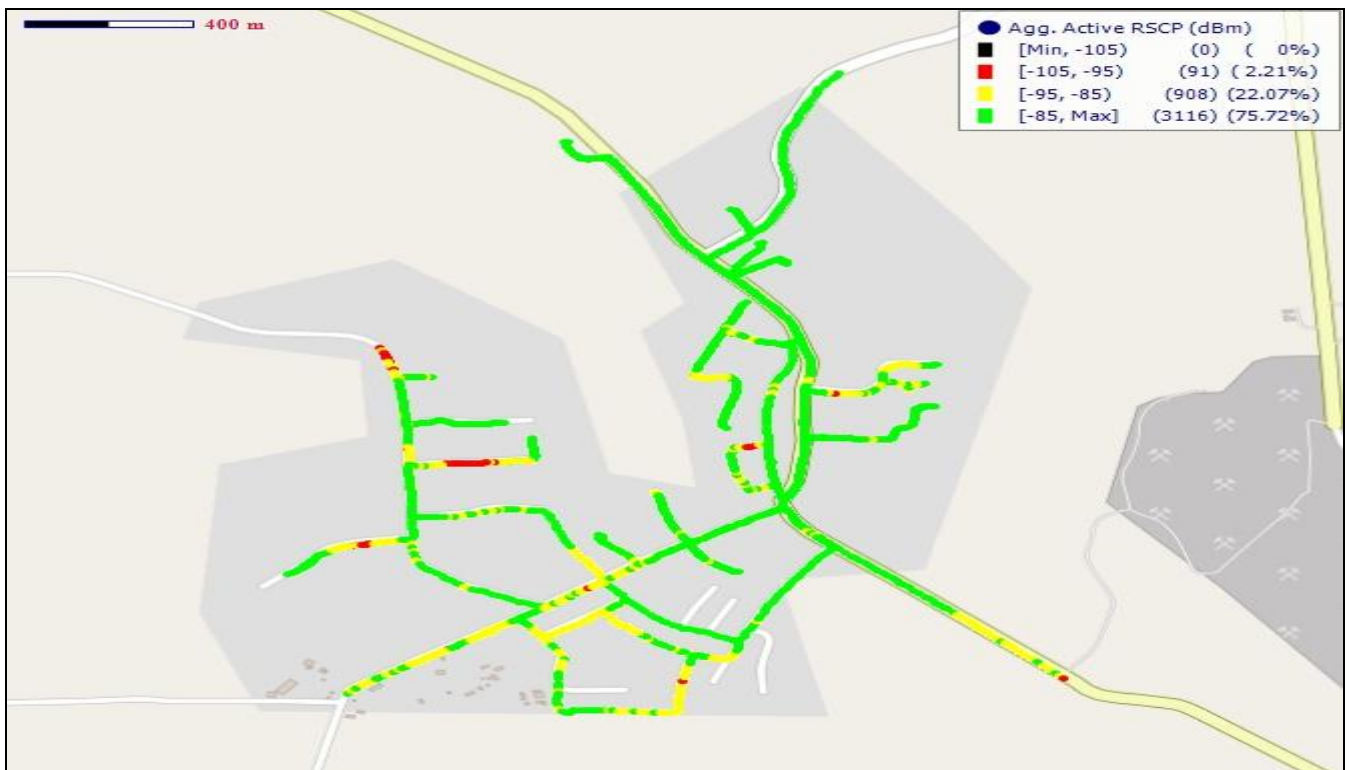
COVERAGE AT MPOHOR

Fig 53- MTN 3G Coverage Map, Mpohor – September 2016



Remarks: Good 3G coverage at Mpohor.

Fig 54– Vodafone 3G Coverage Map, Mpohor – September 2016



Remarks: Good 3G Coverage in Mpohor

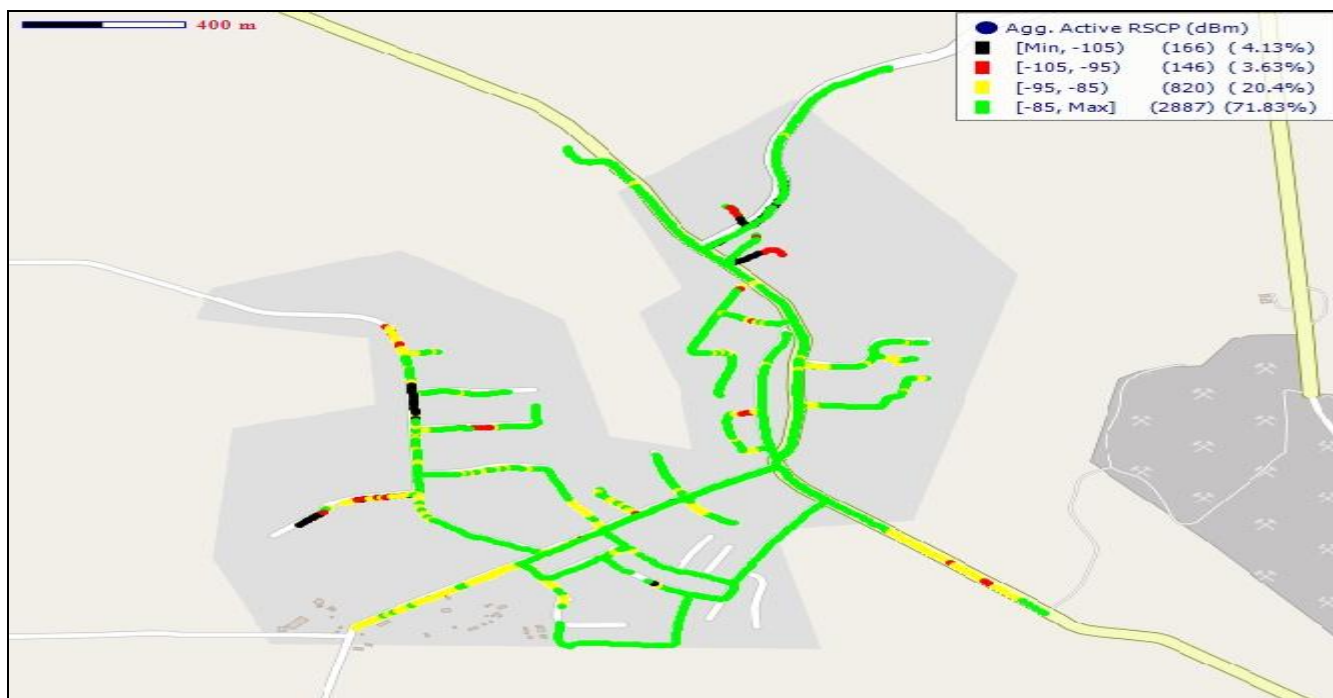
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 55– Tigo 3G Coverage Map, Mpohor – September 2016



Remarks: Good 3G Coverage in Mpohor

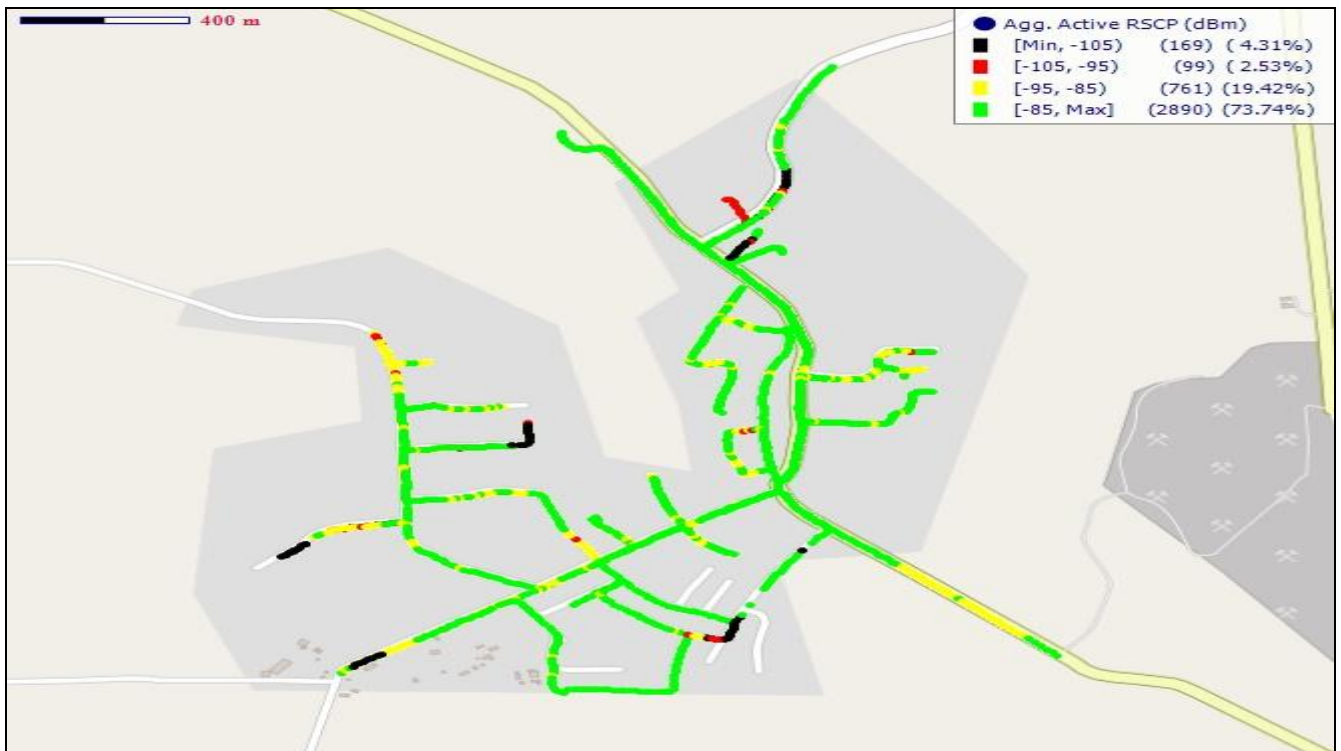
Fig 56– Airtel 3G Coverage Map, Mpohor – September 2016



Remarks: Good 3G Coverage in Mpohor

3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

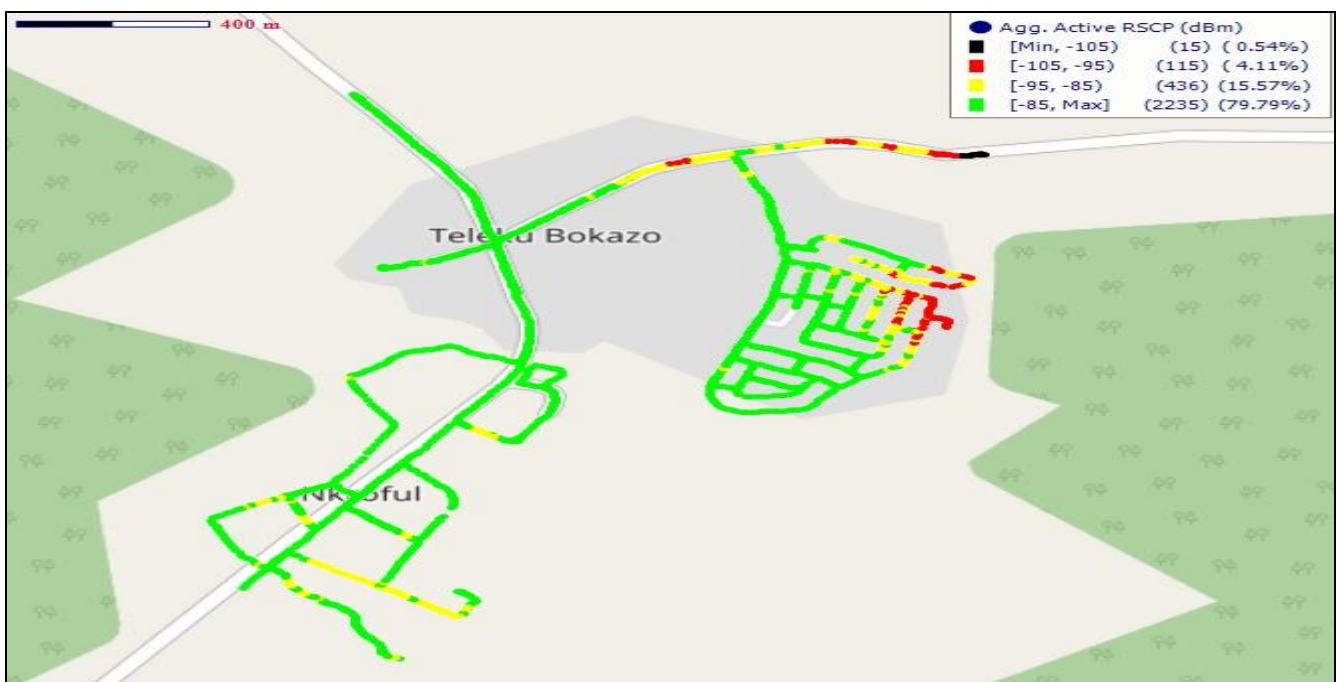
Fig 57–Glo 3G Coverage Map, Mpohor – September 2016



Remarks: Good 3G coverage at Mpohor

COVERAGE AT NKROFUL

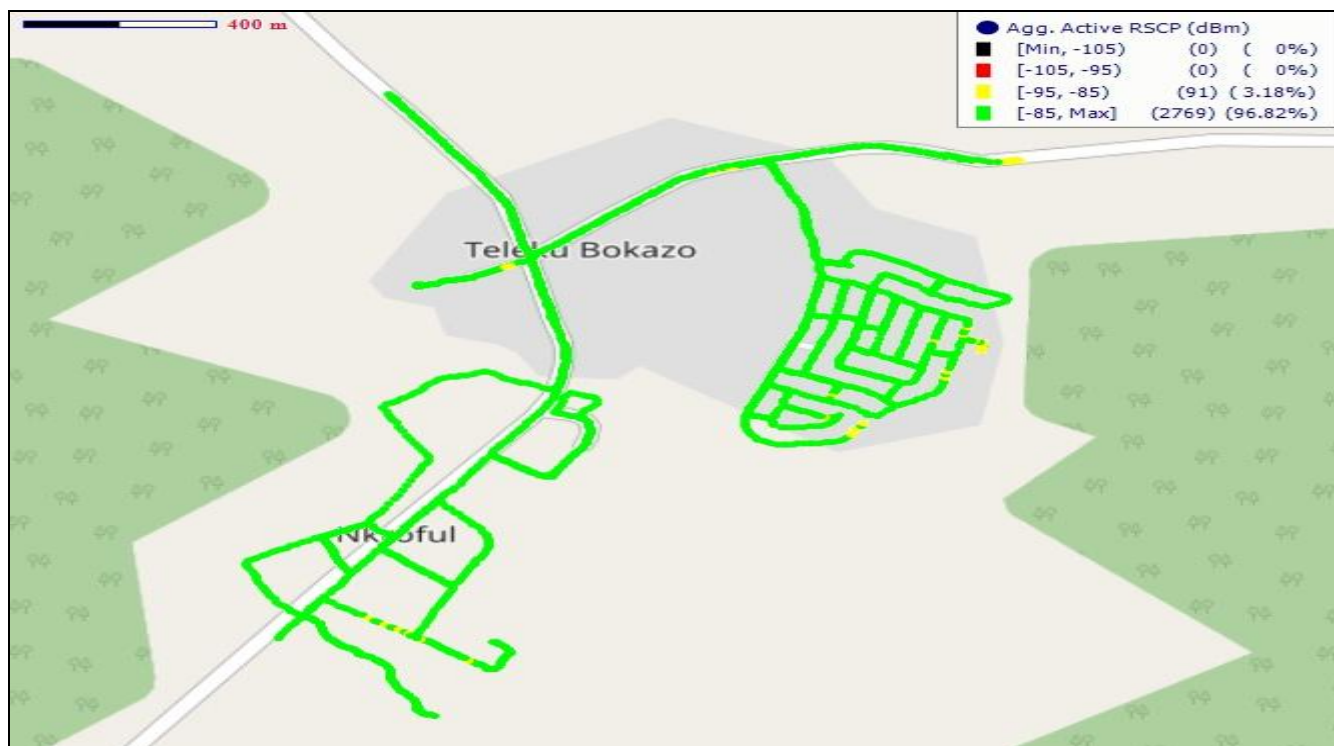
Fig 58- MTN 3G Coverage Map, Nkroful – September 2016



Remarks: Good 3G coverage at Nkroful.

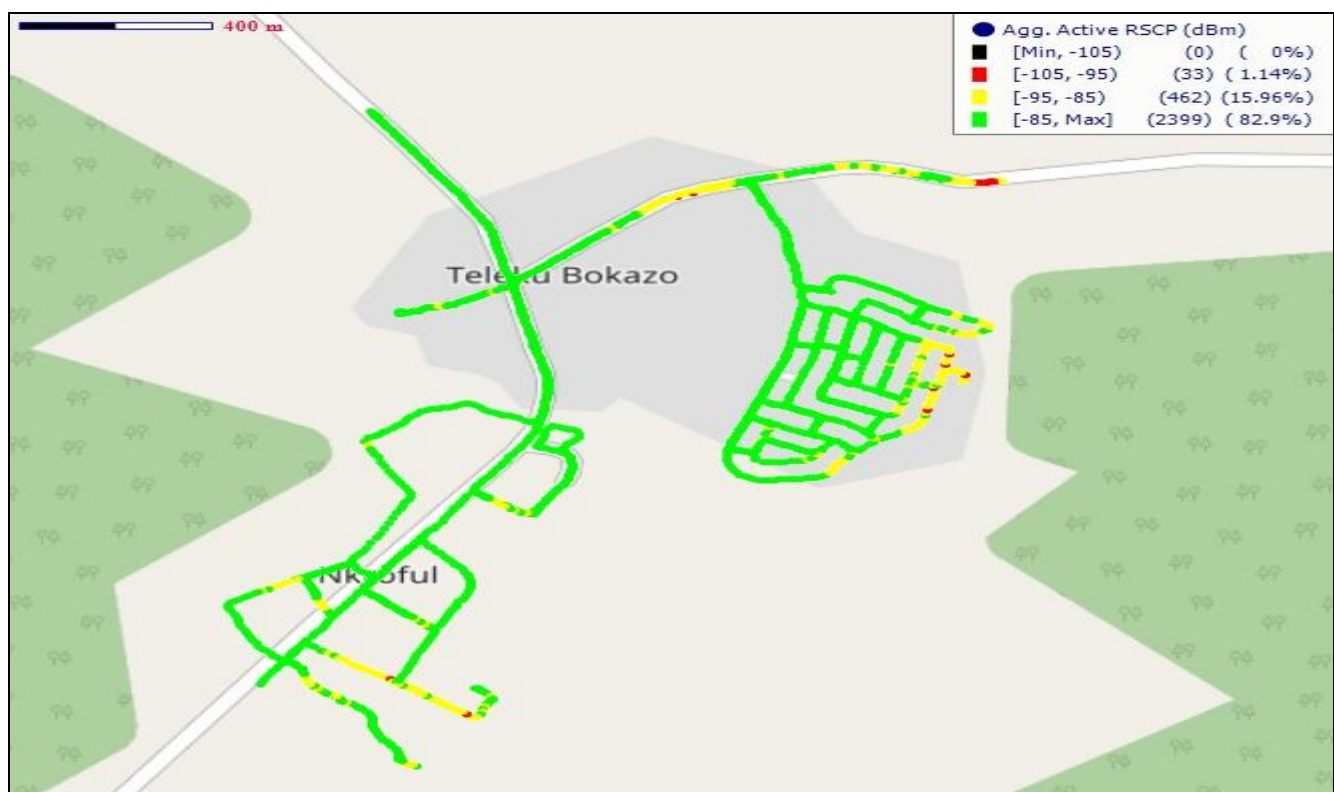
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 59- Vodafone 3G Coverage Map, Nkroful – September 2016



Remarks: Good 3G coverage in Nkroful

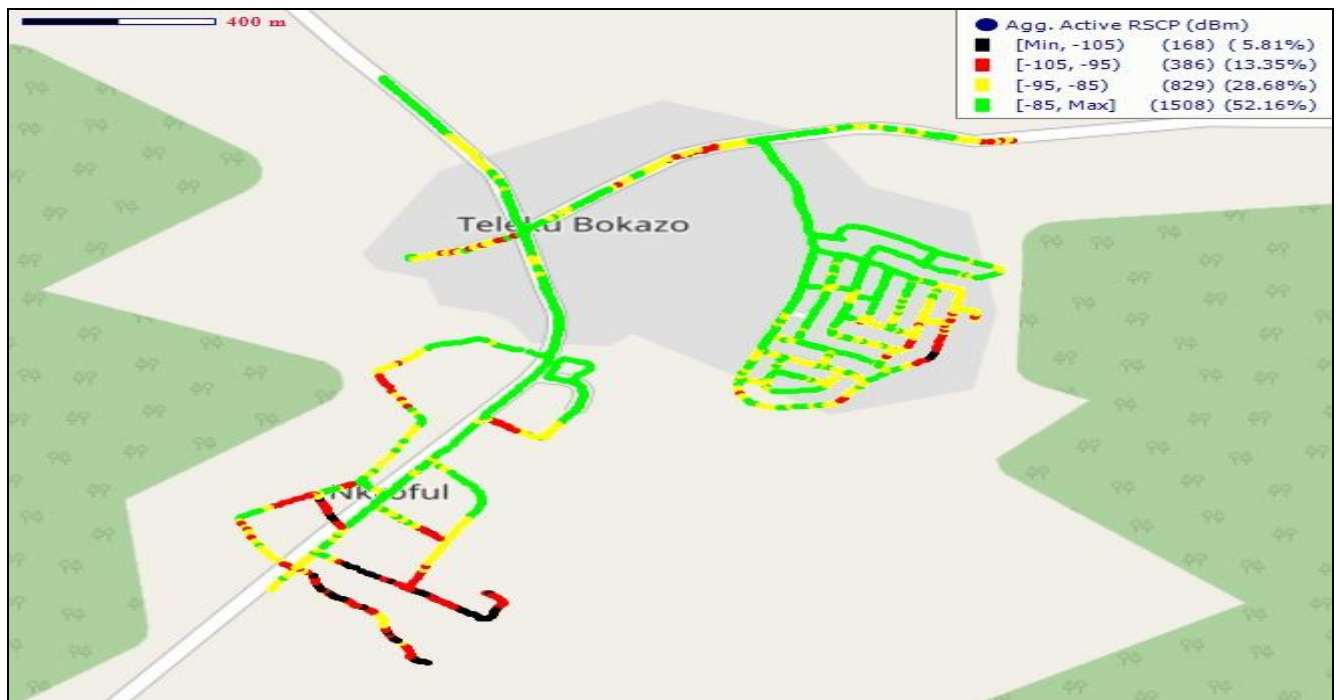
Fig 60- Tigo3G Coverage Map, Nkroful – September 2016



Remarks: Good 3G coverage in Nkroful.

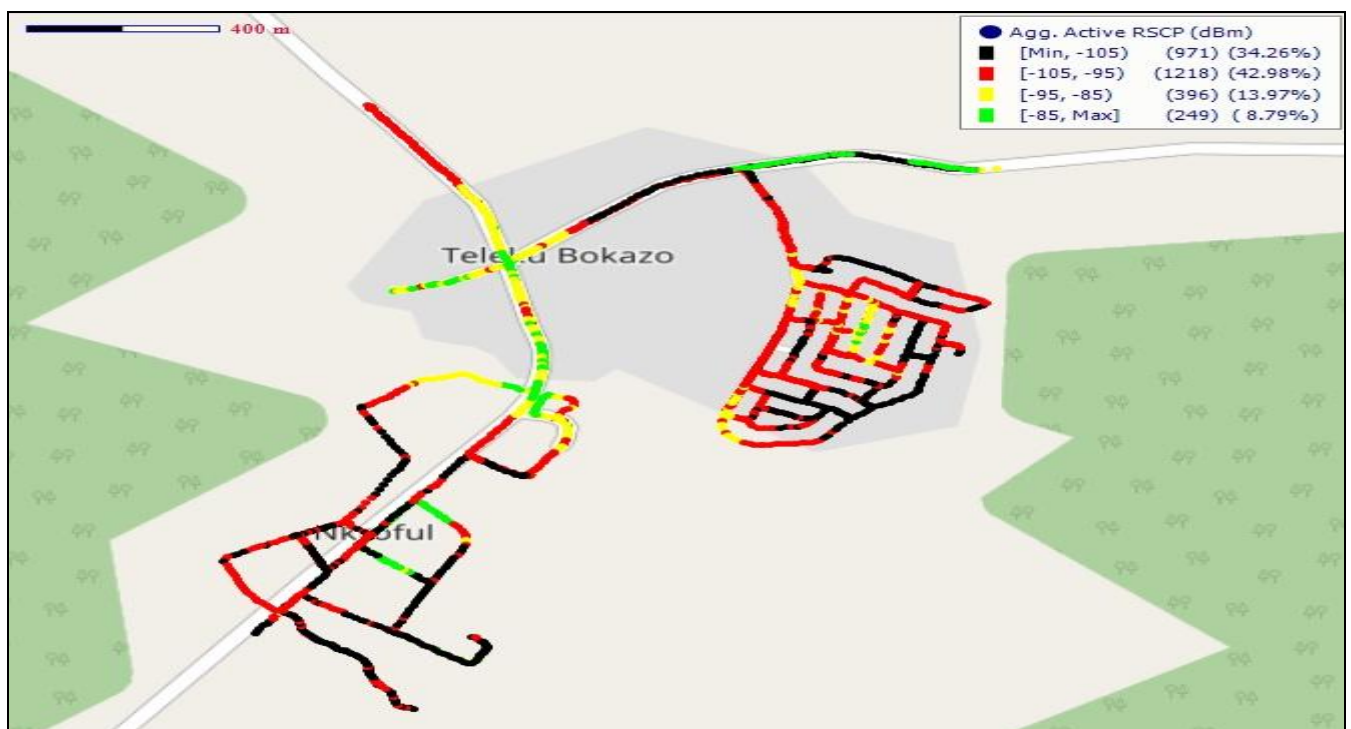
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 61- Airtel 3G Coverage Map, Nkroful – September 2016



Remarks: Good 3G coverage in and around Nkroful that needs to be improved

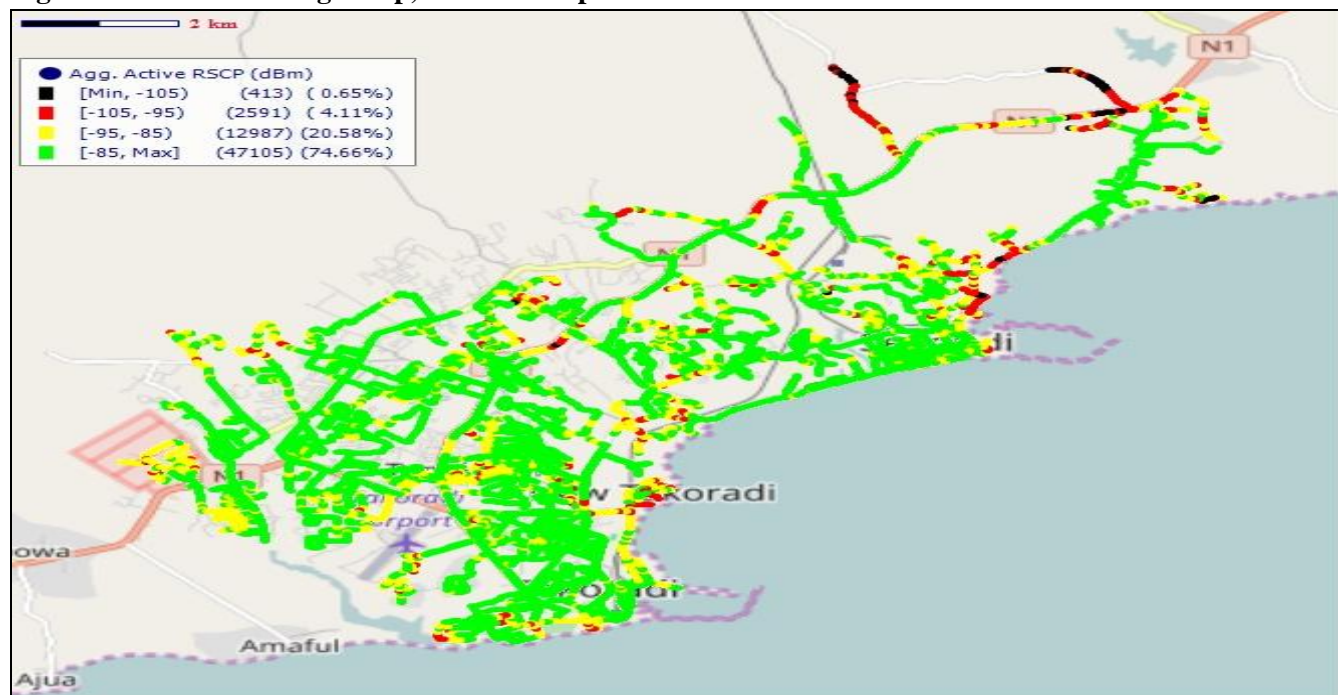
Fig 62-Glo 3G Coverage Map, Nkroful – September 2016



Remarks: Poor 3G coverage at Nkroful. Major improvement is needed.

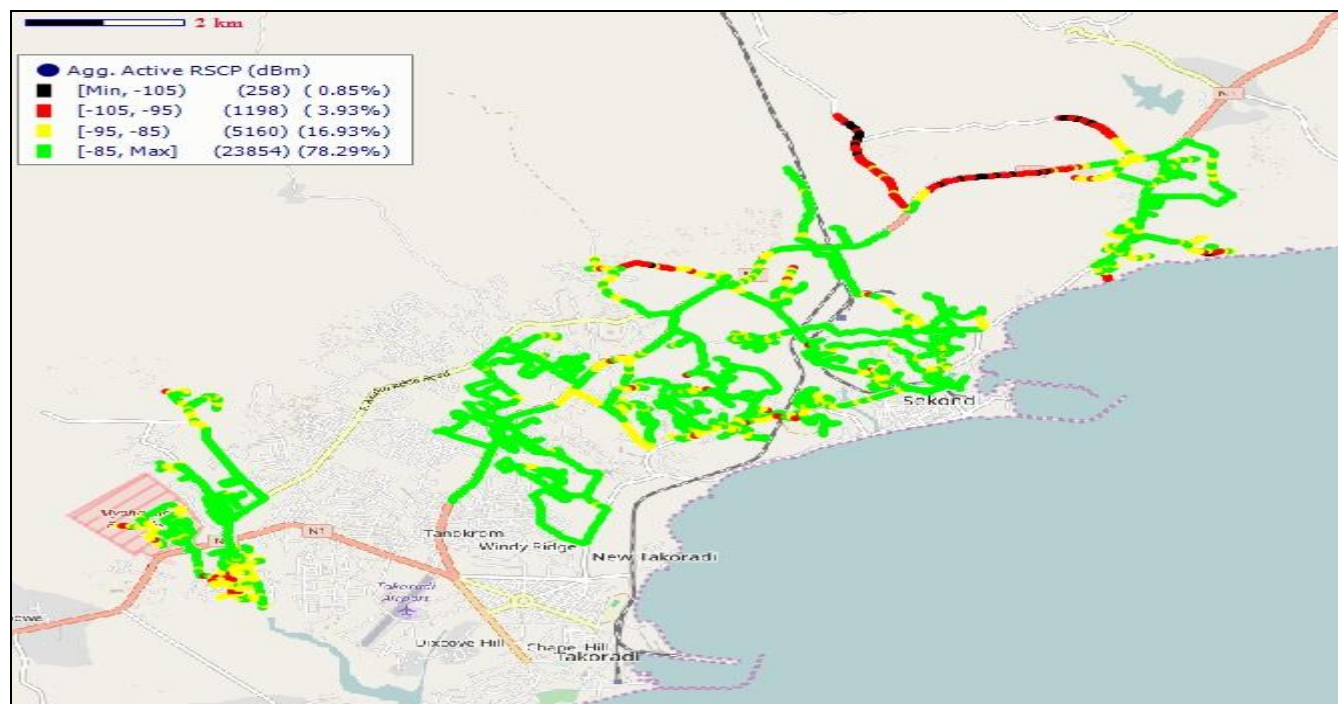
COVERAGE AT SEKONDI

Fig 63- MTN 3G Coverage Map, Sekondi– September 2016



Remarks: Good 3G coverage at Sekondi-Takoradi.

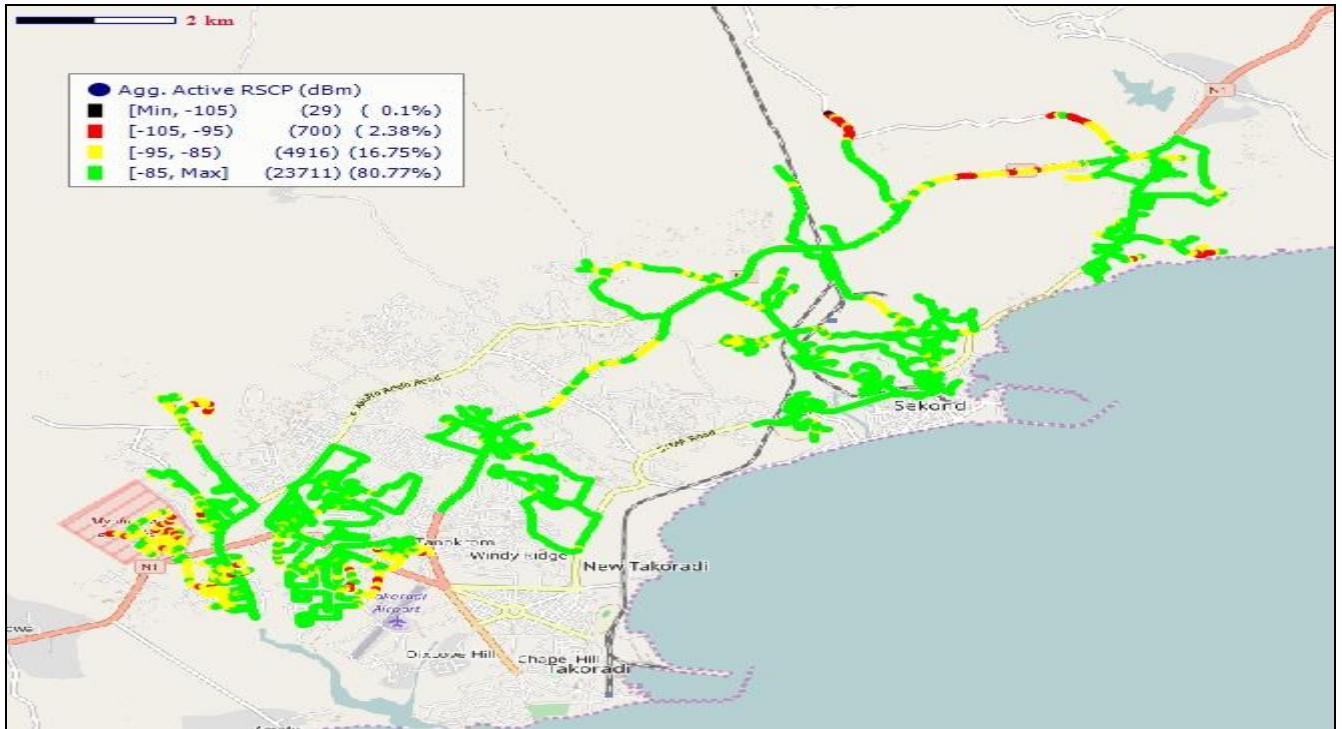
Fig 64- Vodafone 3G Coverage Map, Sekondi– September 2016



Remarks: Good 3G coverage in Sekondi-Takoradi

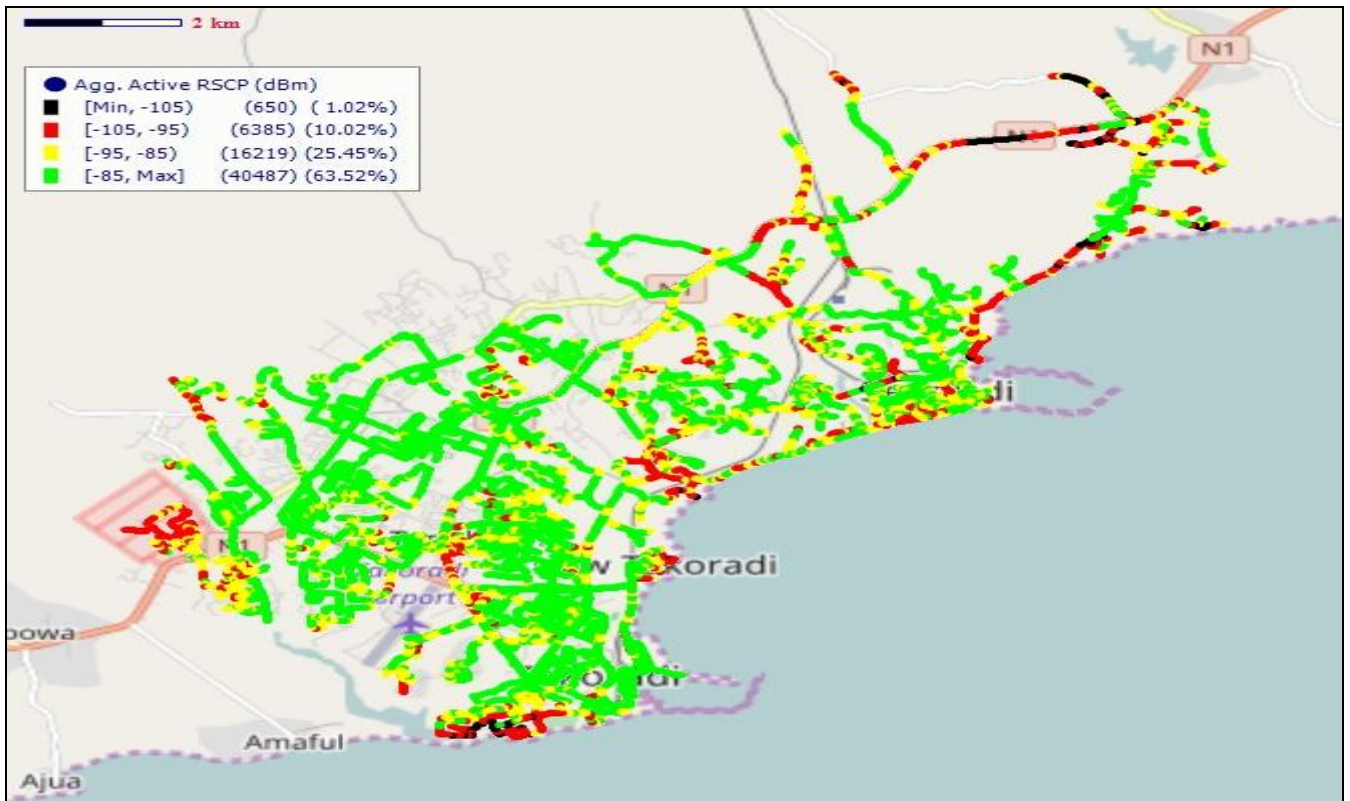
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 65– Tigo 3G Coverage Map, Sekondi– September 2016



Remarks: Good 3G coverage in Sekondi-Takoradi

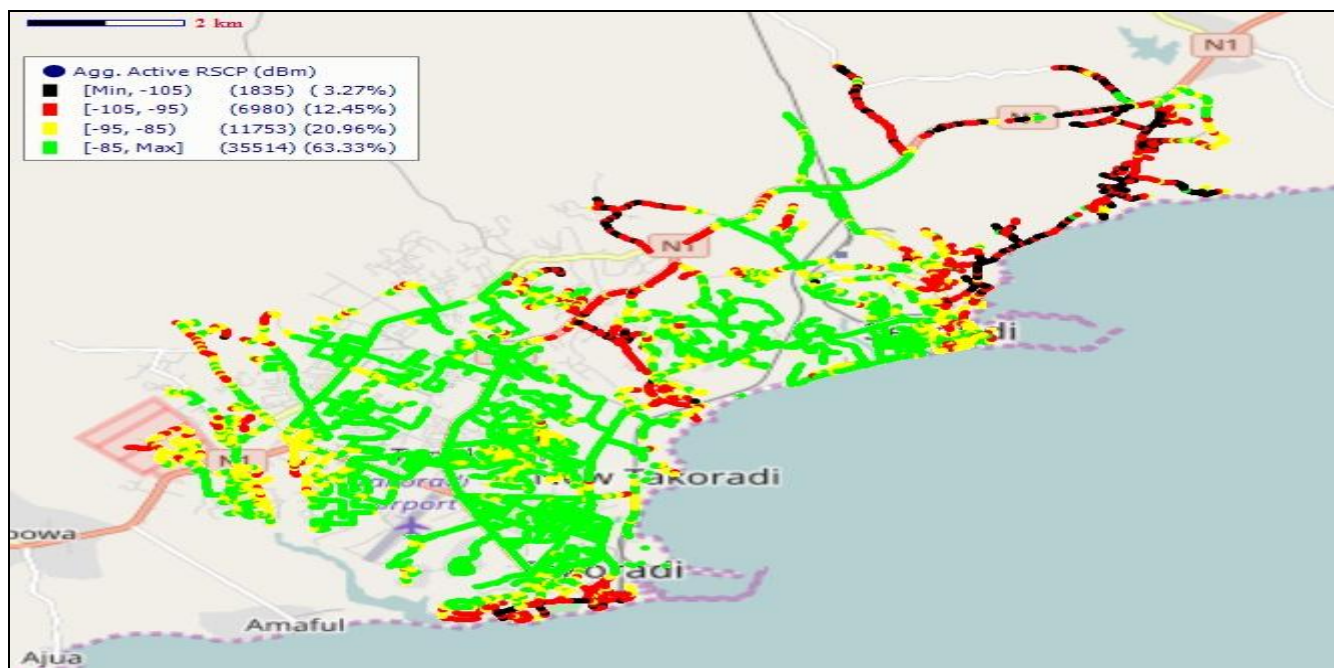
Fig 66- Airtel 3G Coverage Map, Sekondi– September 2016



Remarks: Good 3G coverage in Sekondi-Takoradi however requires improvement.

3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

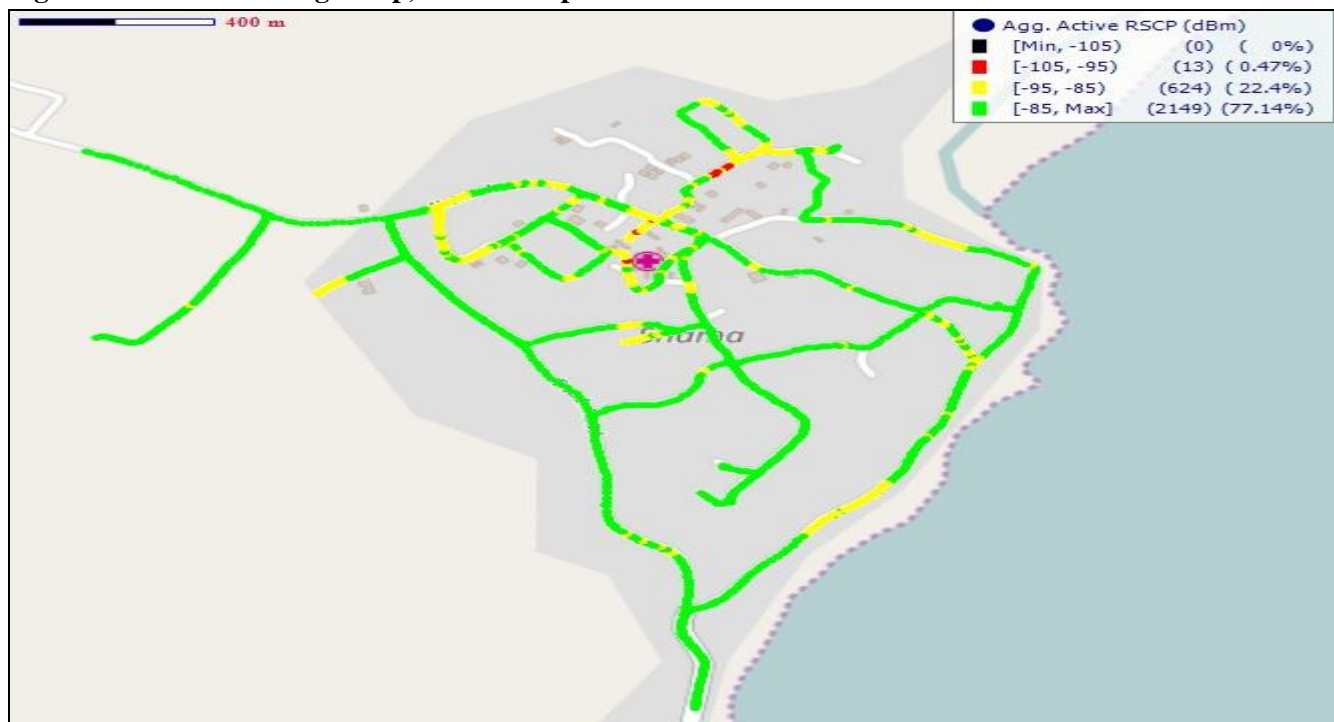
Fig 67- Glo 3G Coverage Map, Sekondi– September 2016



Remarks: Good 3G coverage in Sekondi-Takoradi however requires improvement.

COVERAGE AT SHAMA

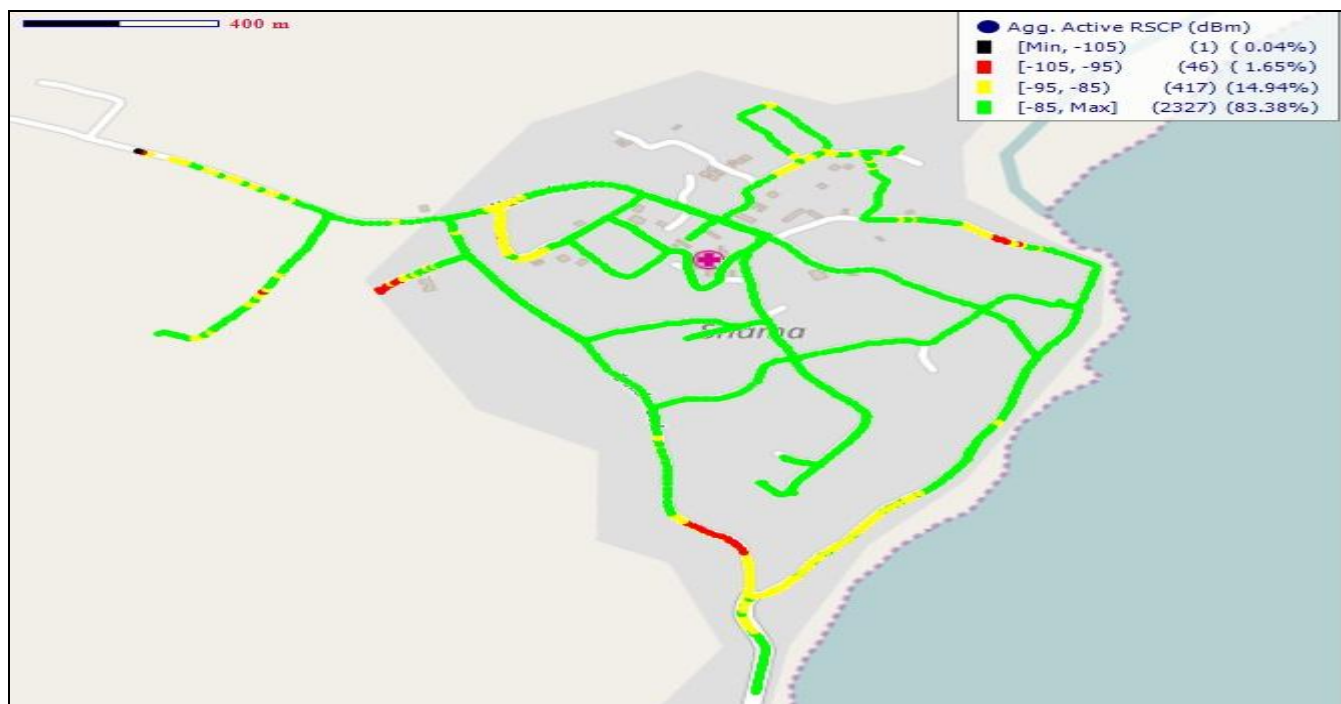
Fig 68- MTN 3G Coverage Map, Shama– September 2016



Remarks: Good 3G coverage at Shama.

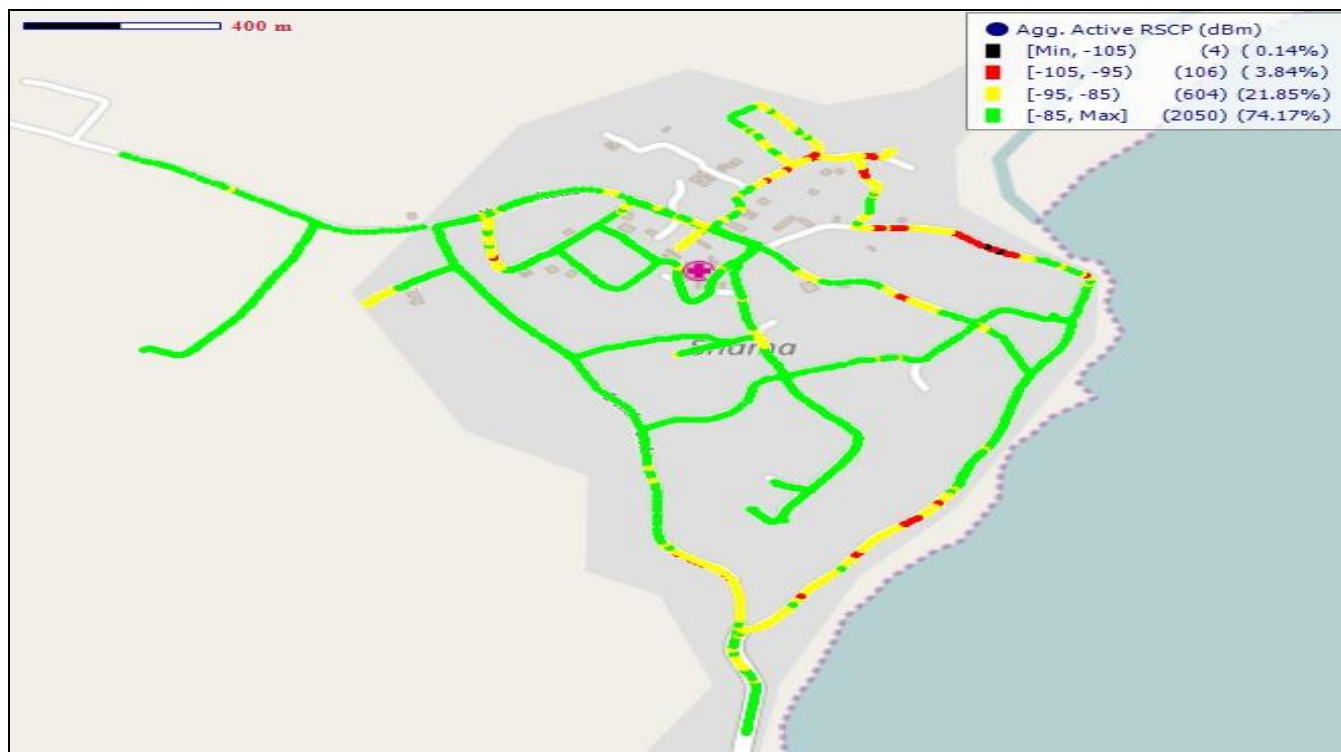
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 69- Vodafone 3G Coverage Map, Shama– September 2016



Remarks: Good 3G coverage in Shama

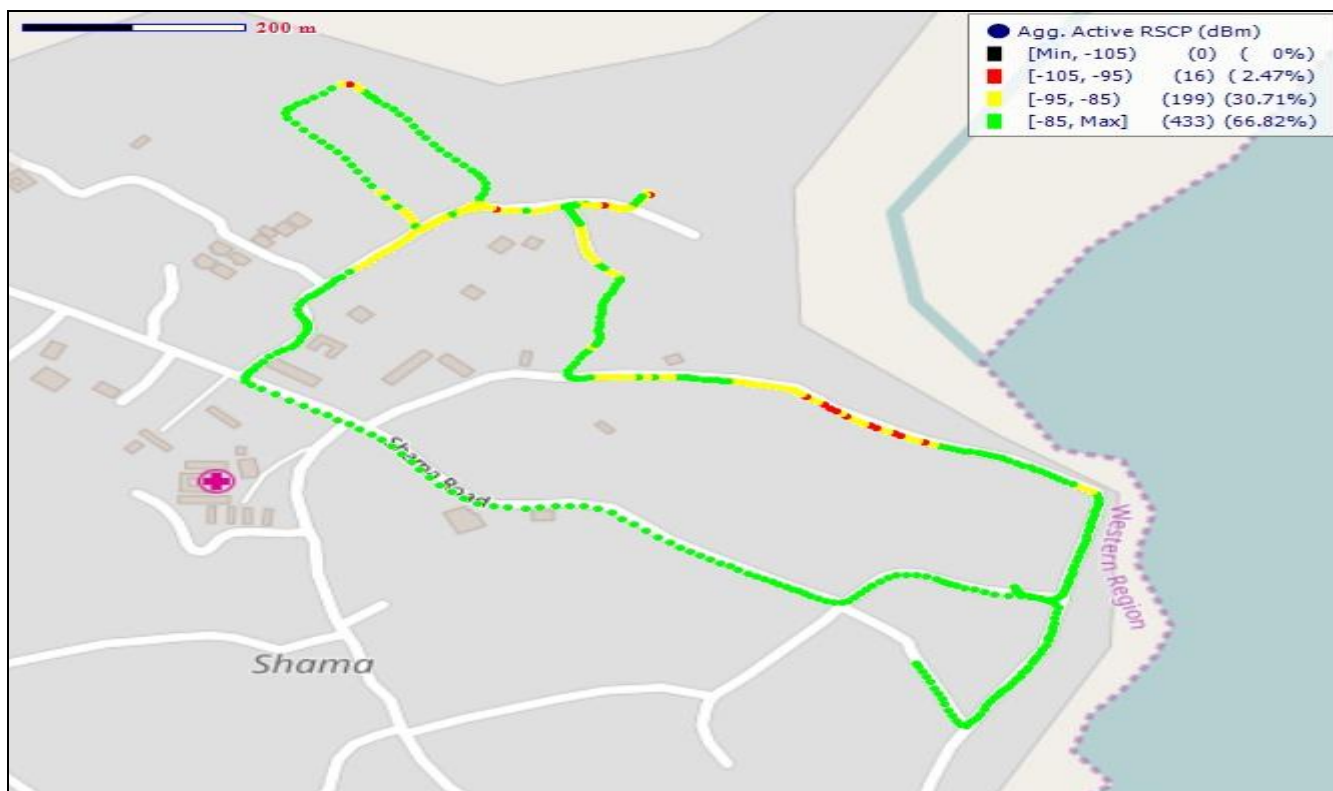
Fig 70– Tigo 3G Coverage Map, Shama– September 2016



Remarks: Good 3G coverage in Shama

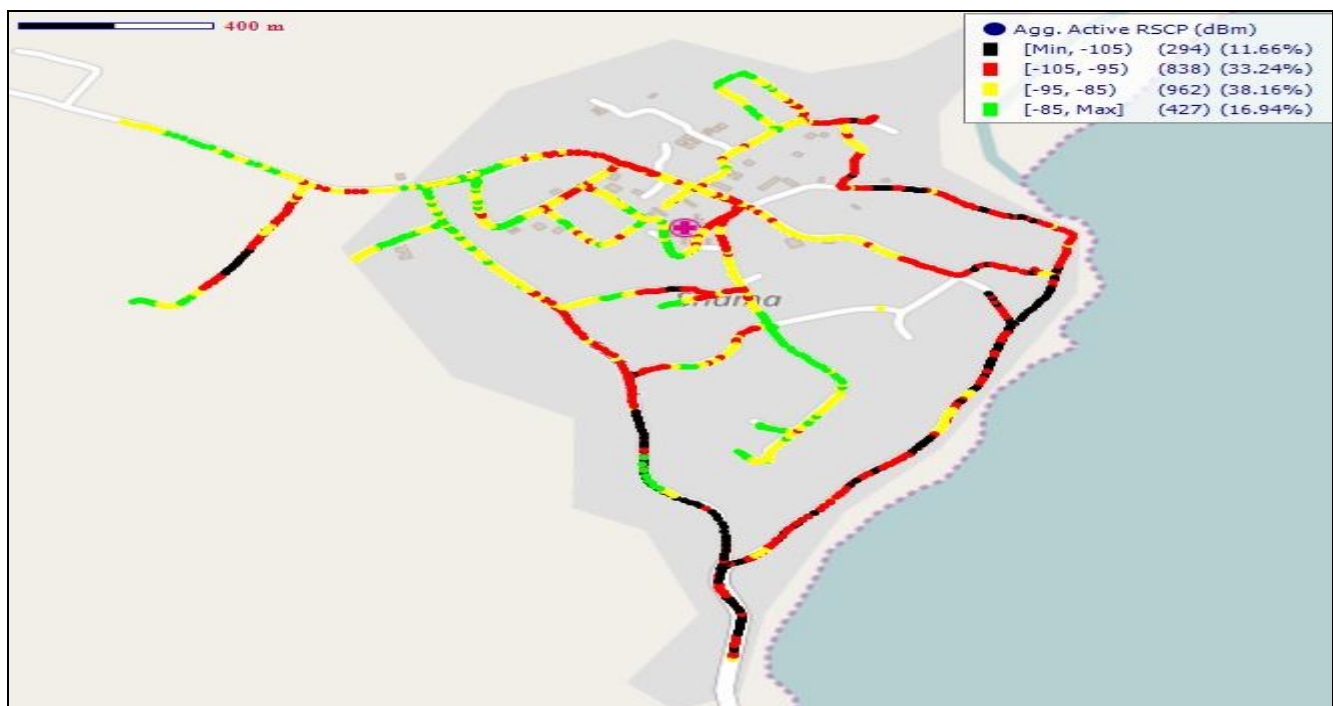
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 71- Airtel 3G Coverage Map, Shama– September 2016



Remarks: Good 3G coverage in Shama

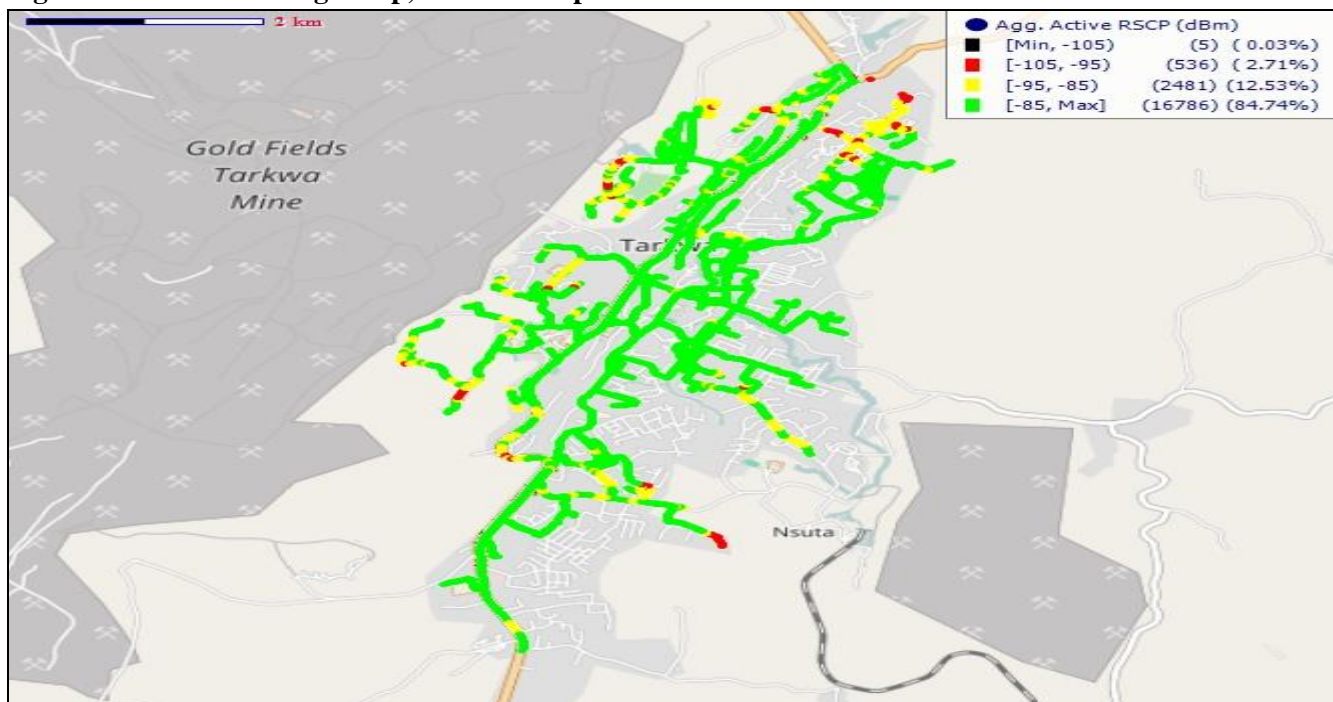
Fig 72- Glo 3G Coverage Map, Shama– September 2016



Remarks: Poor 3G coverage at Shama. Major improvement is needed.

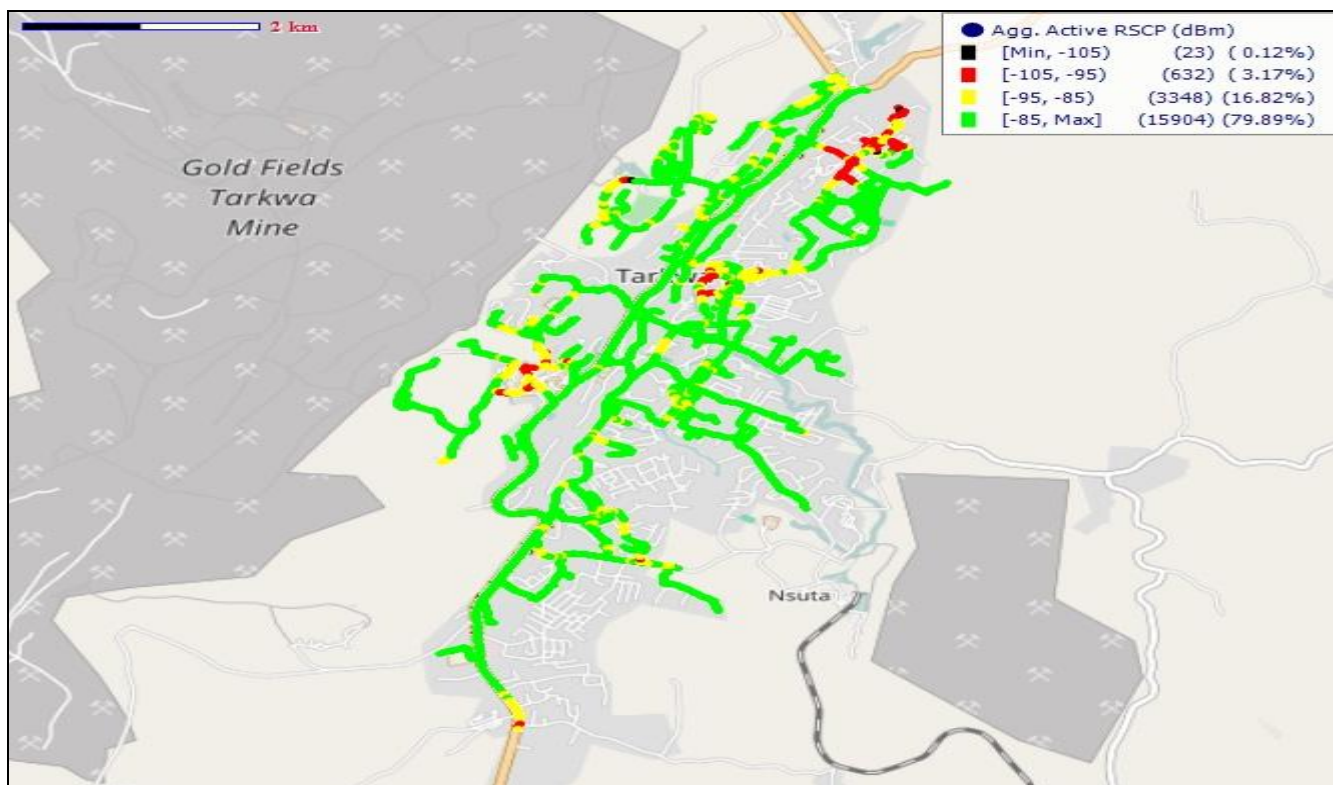
COVERAGE AT TARKWA

Fig 73- MTN 3G Coverage Map, Tarkwa– September 2016



Remarks: Good 3G coverage at Tarkwa.

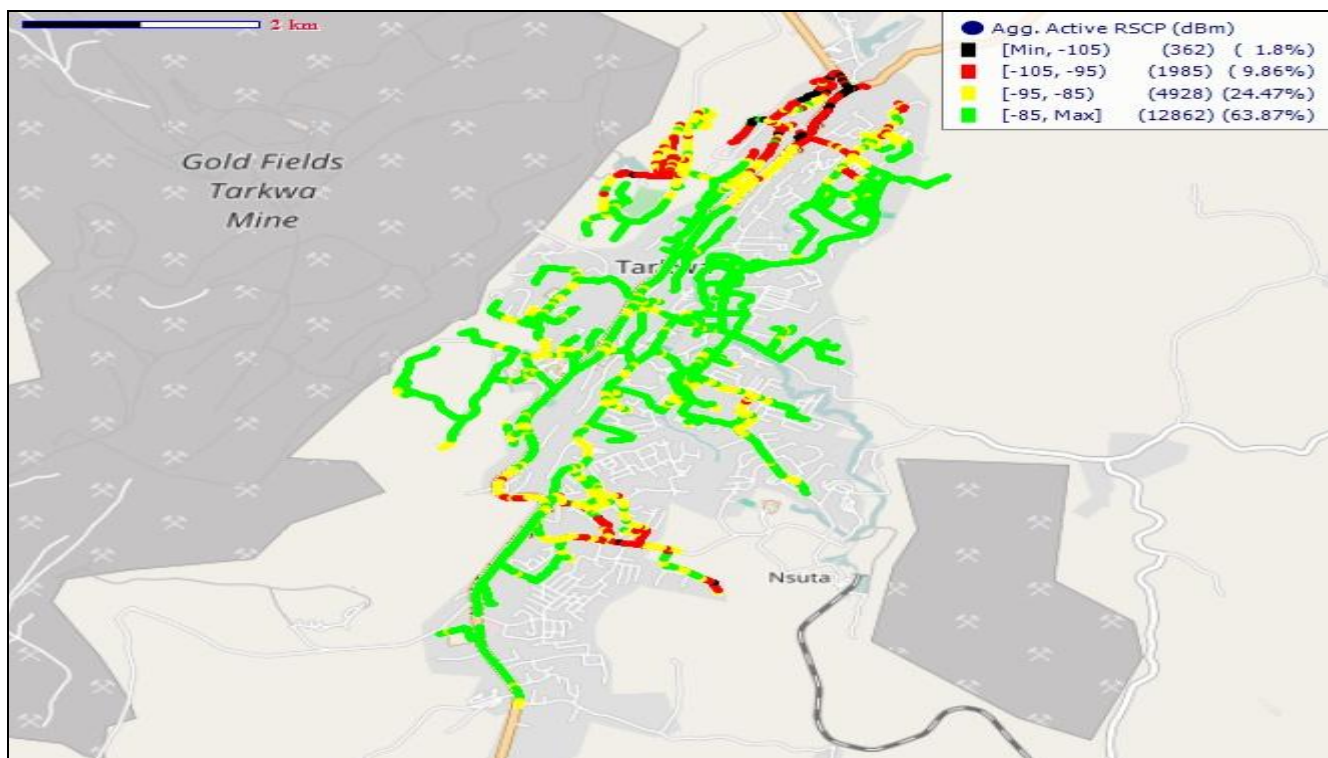
Fig 74- Vodafone 3G Coverage Map, Tarkwa– September 2016



Remarks: Good 3G coverage in Tarkwa

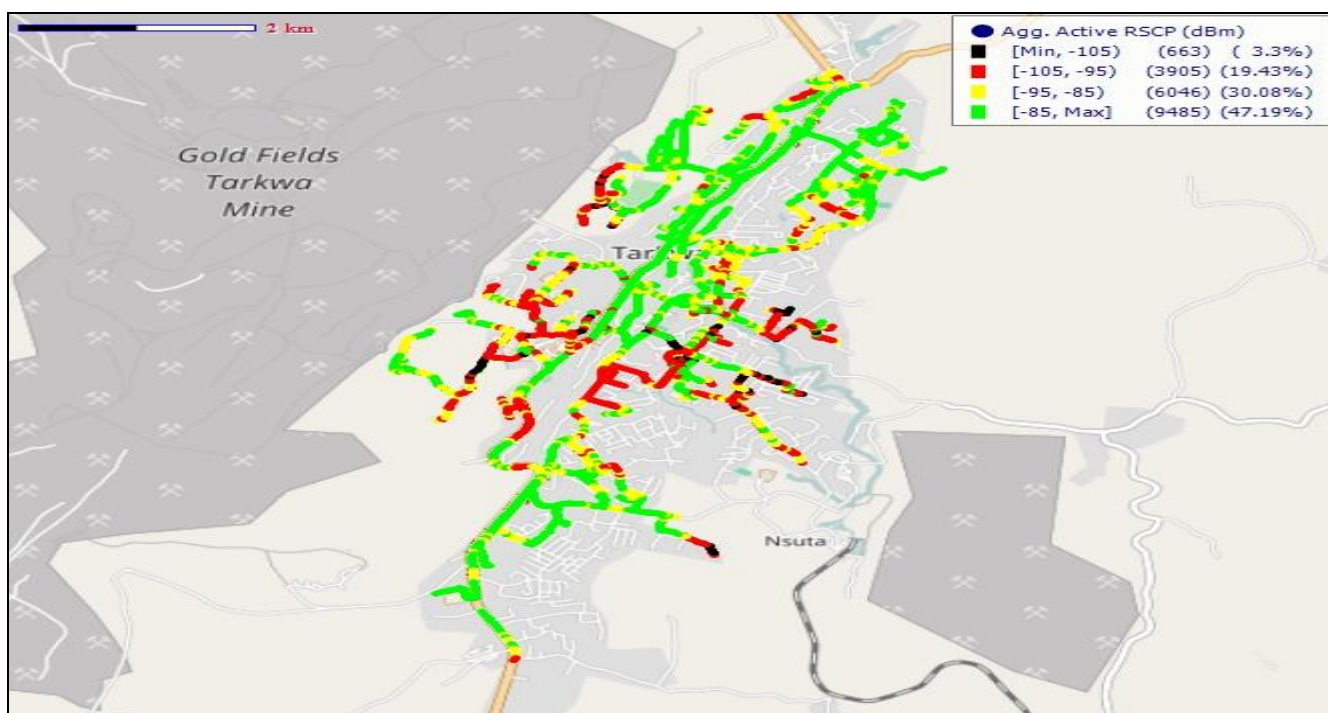
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 75– Tigo 3G Coverage Map, Tarkwa– September 2016



Remarks: Good 3G coverage in Tarkwa however improvement is required

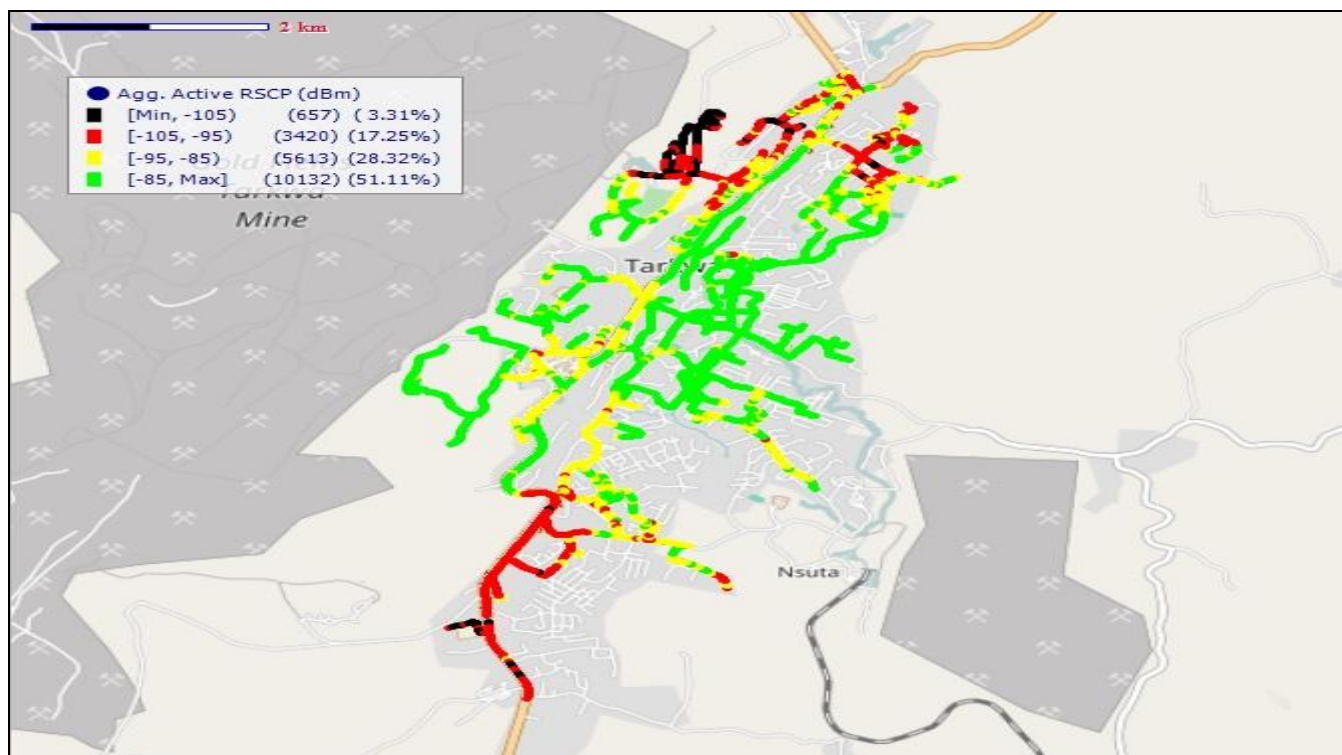
Fig 76- Airtel 3G Coverage Map, Tarkwa– September 2016



Remarks: Fair 3G coverage in Tarkwa which needs to be improved

3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

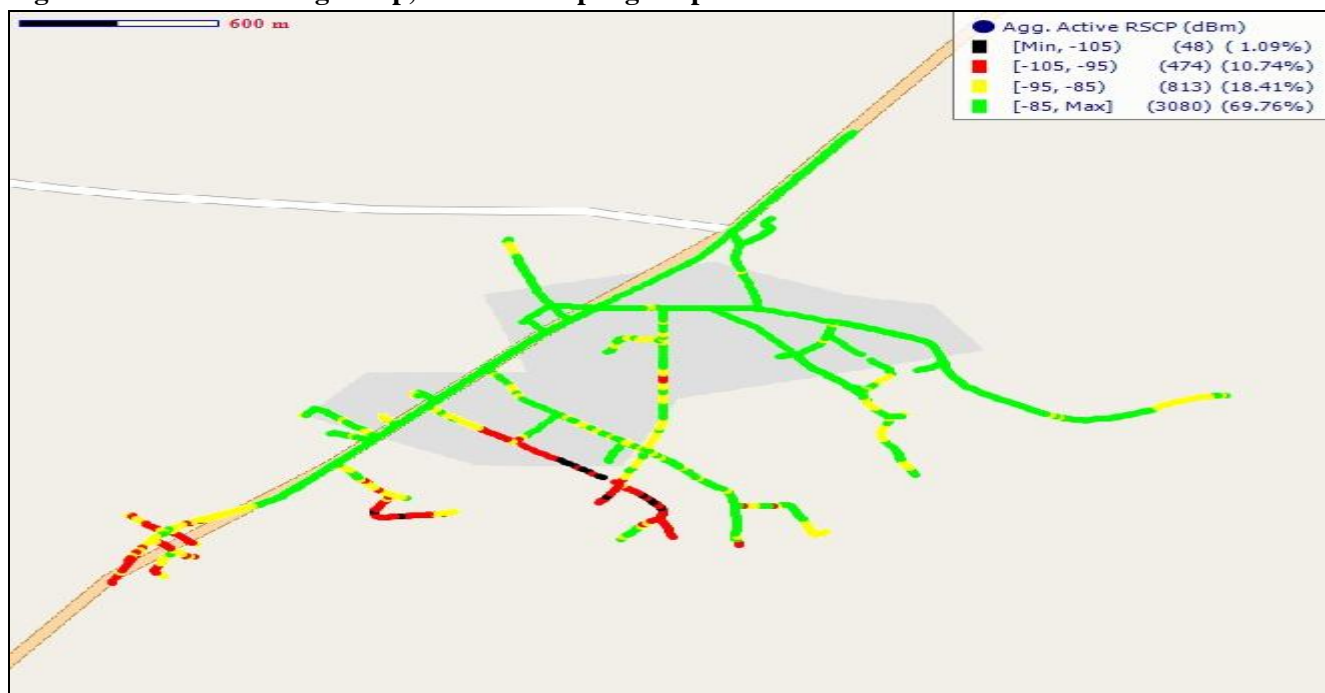
Fig 77- Glo 3G Coverage Map, Tarkwa– September 2016



Remarks: Fair 3G coverage in Tarkwa which needs to be improved

COVERAGE AT WASSA AKROPONG

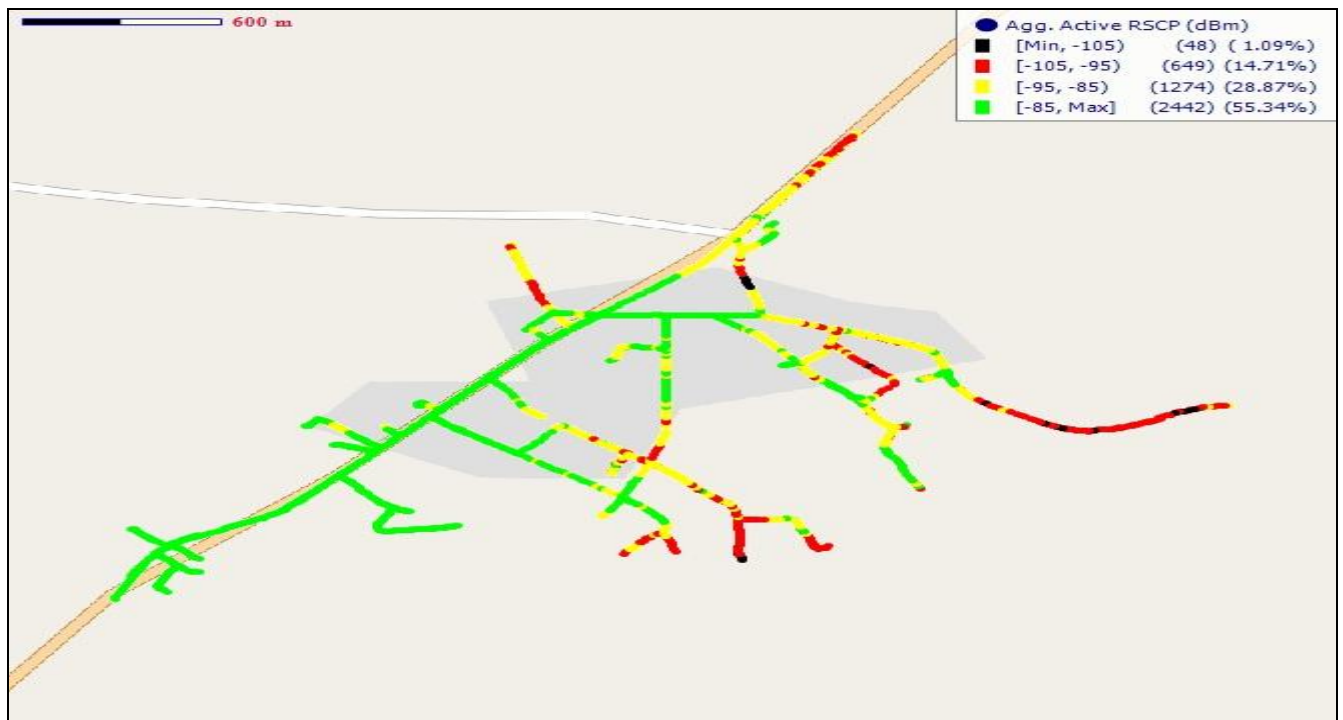
Fig 78- MTN 3G Coverage Map, Wassa Akropong– September 2016



Remarks: Good 3G coverage at Wassa Akropong.

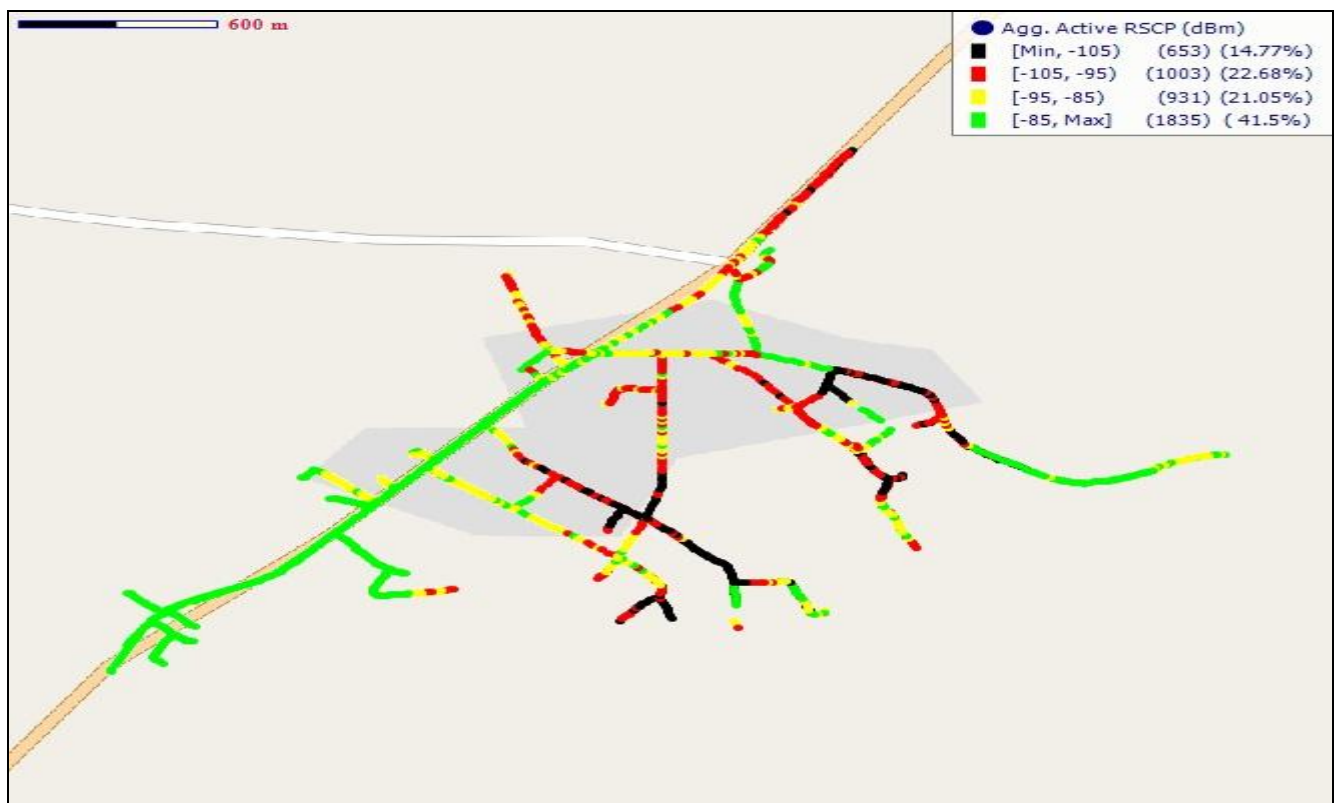
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 79- Vodafone 3G Coverage Map, Wassa Akropong– September 2016



Remarks: Good 3G coverage in Wassa Akropong however, requires improvement.

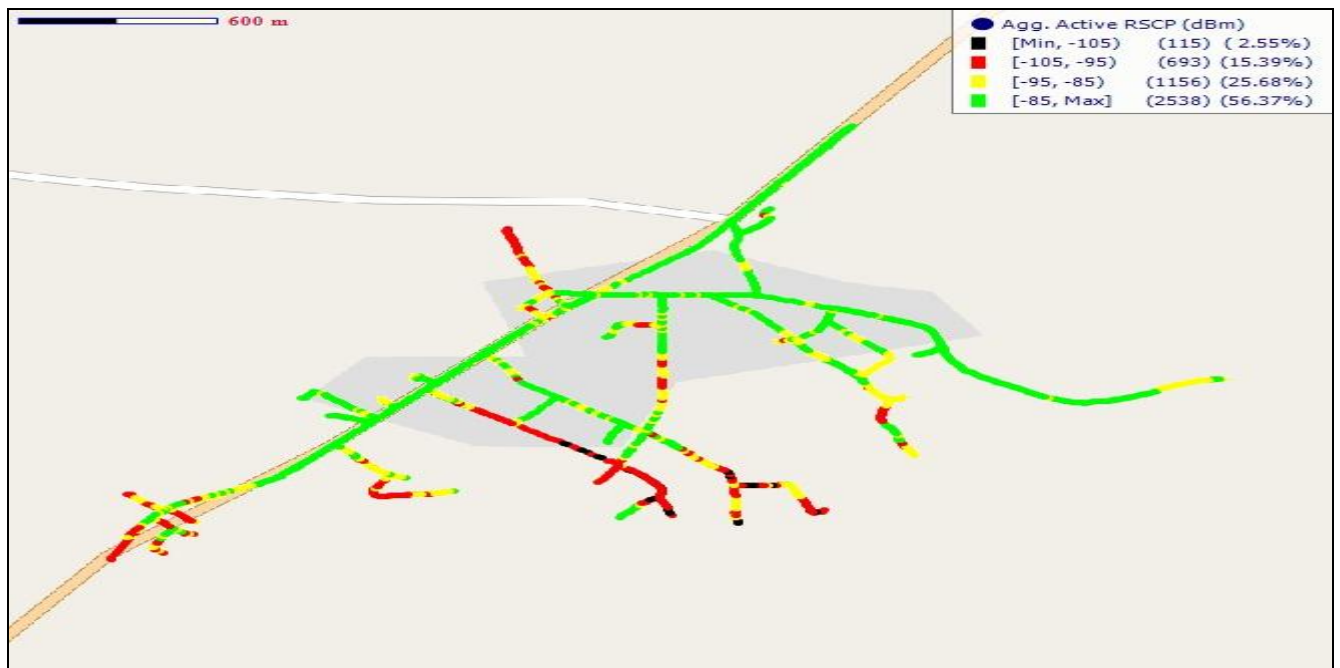
Fig 80– Tigo 3G Coverage Map, Wassa Akropong– September 2016



Remarks: Fair 3G coverage at Wassa Akropong which needs to be improved

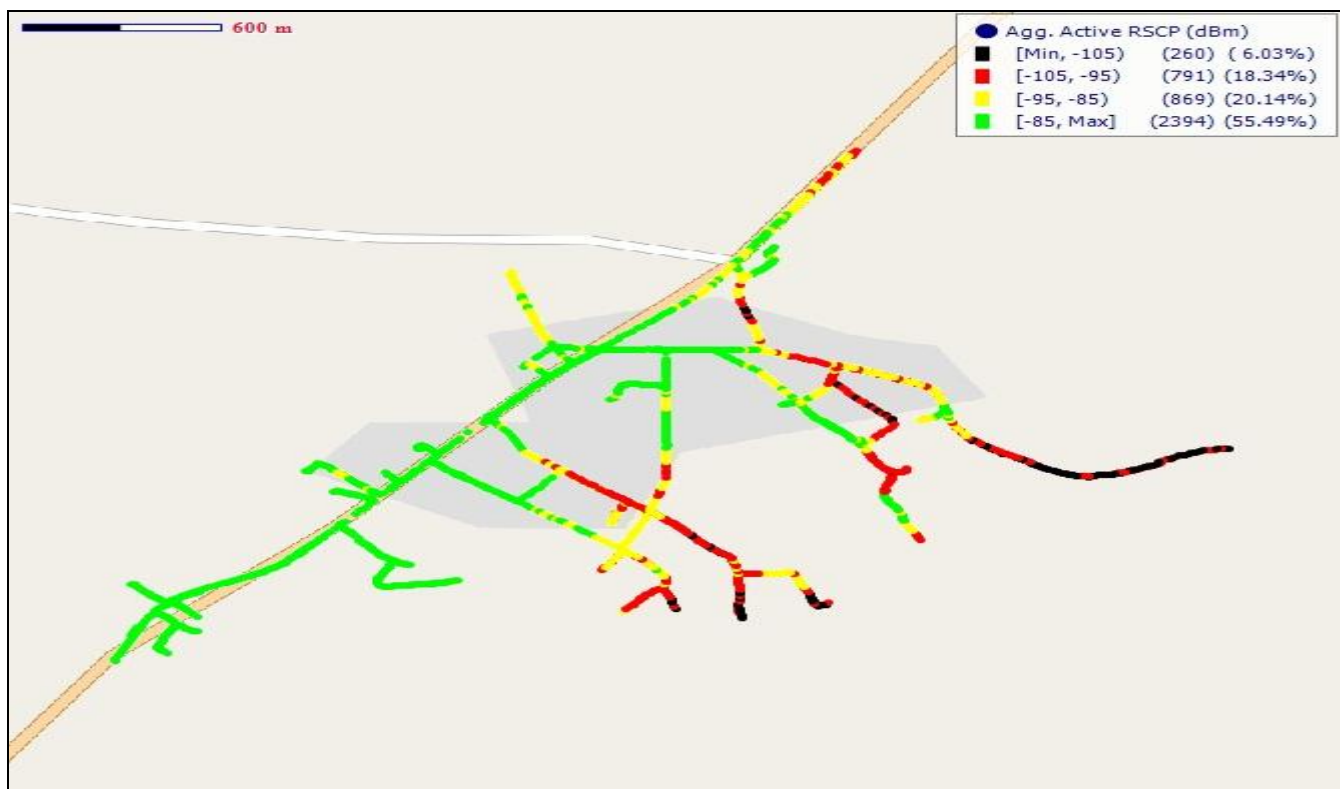
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 81- Airtel 3G Coverage Map, Wassa Akropong– September 2016



Remarks: Fair 3G coverage in and around Wassa Akropong that needs to be improved

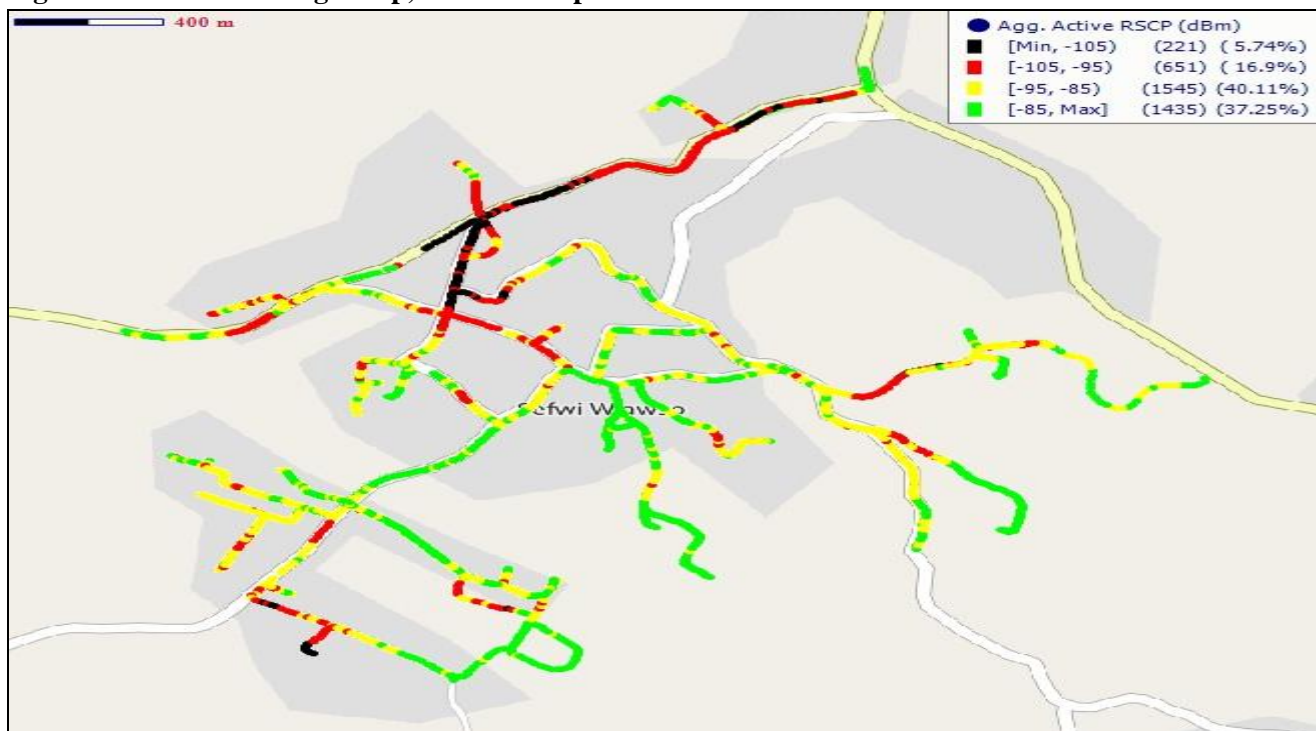
Fig 82-Glo 3G Coverage Map, Wassa Akropong– September 2016



Remarks: Good 3G coverage at Wassa Akropong.

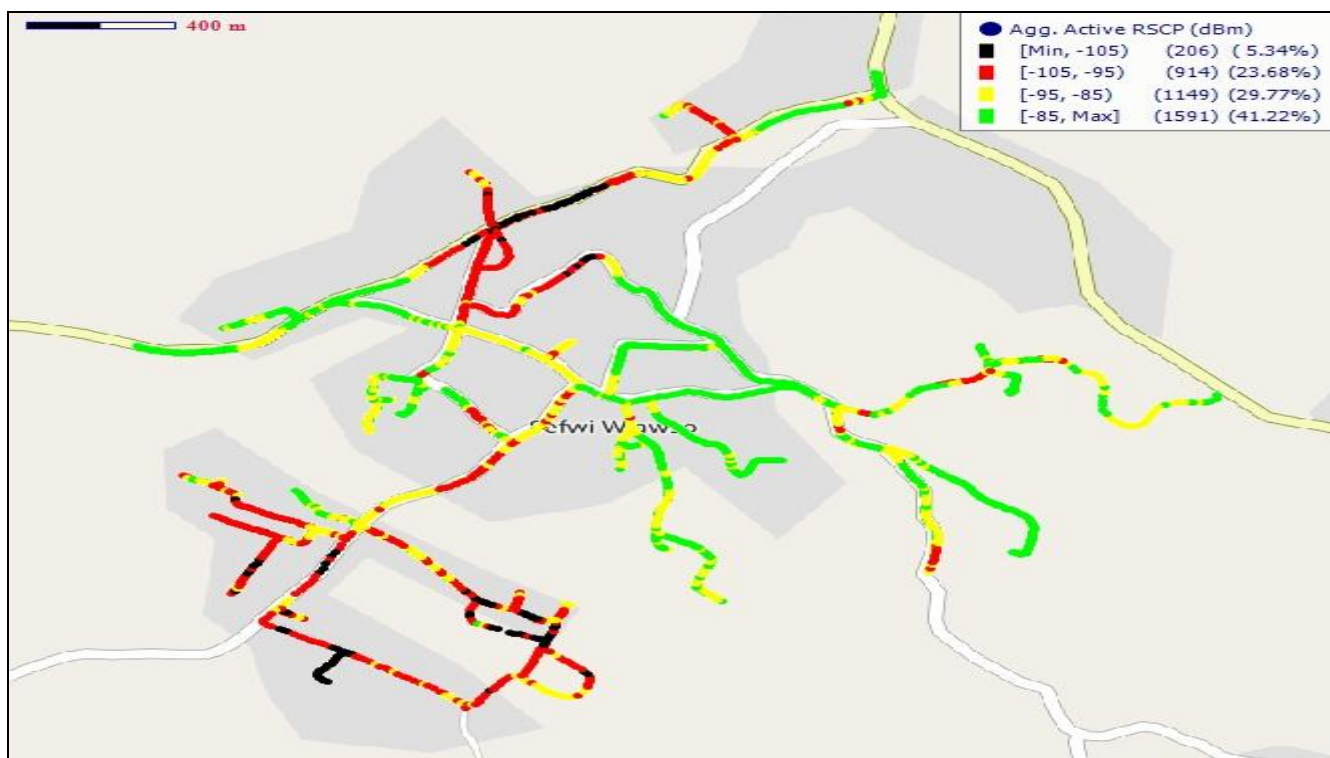
COVERAGE AT WIAWSO

Fig 83- MTN 3G Coverage Map, Wiawso– September 2016



Remarks: Fair 3G coverage at Wiawso which needs to be improved

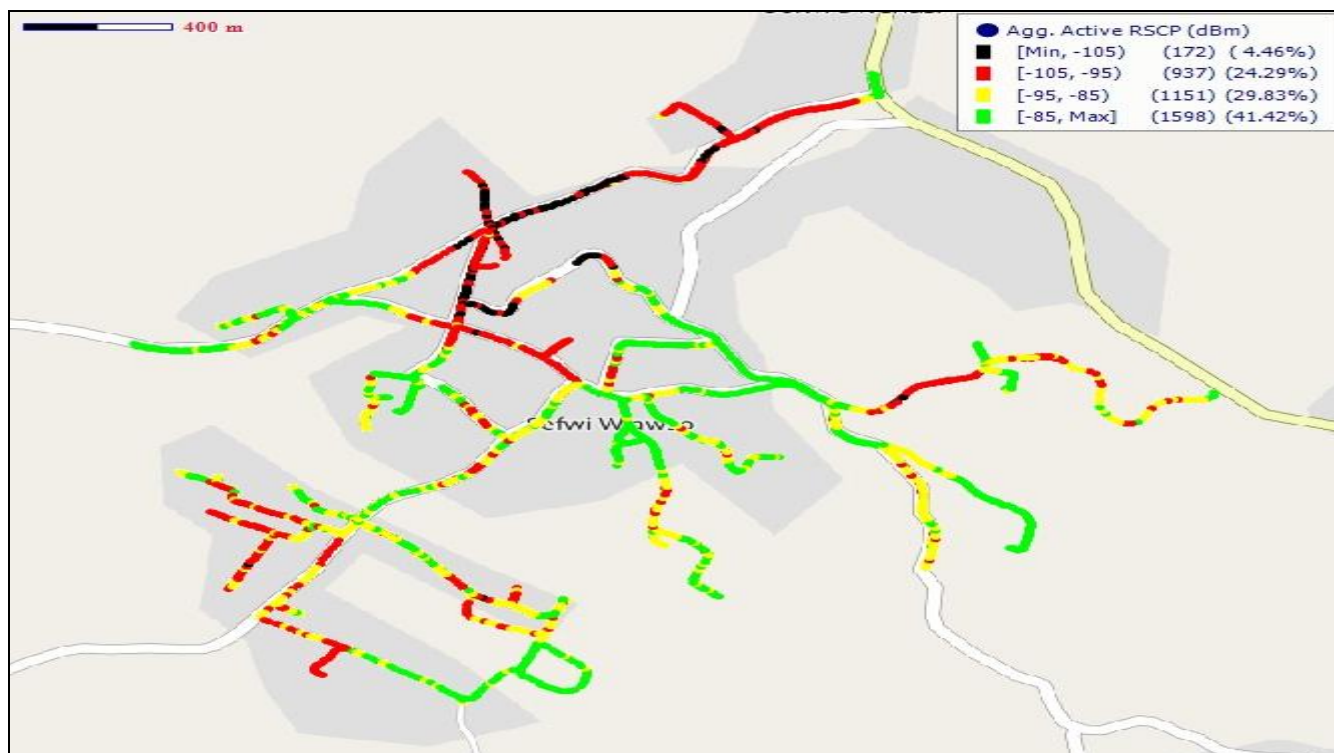
Fig 84- Vodafone 3G Coverage Map, Wiawso– September 2016



Remarks: Fair 3G coverage in Wiawso which requires improvement

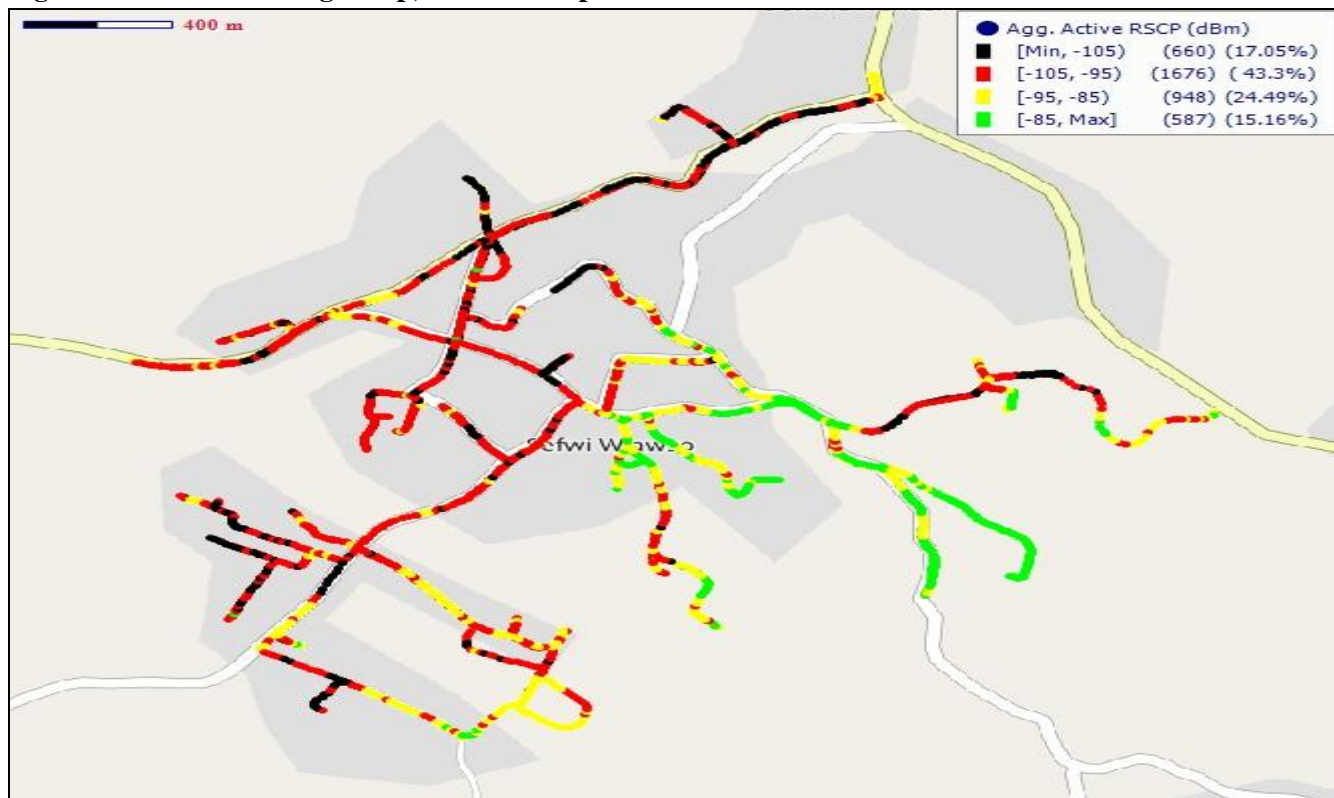
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 85– Tigo 3G Coverage Map, Wiawso– September 2016



Remarks: Fair 3G coverage in and around Wiawso which needs to be improved

Fig 86- Airtel 3G Coverage Map, Wiawso– September 2016

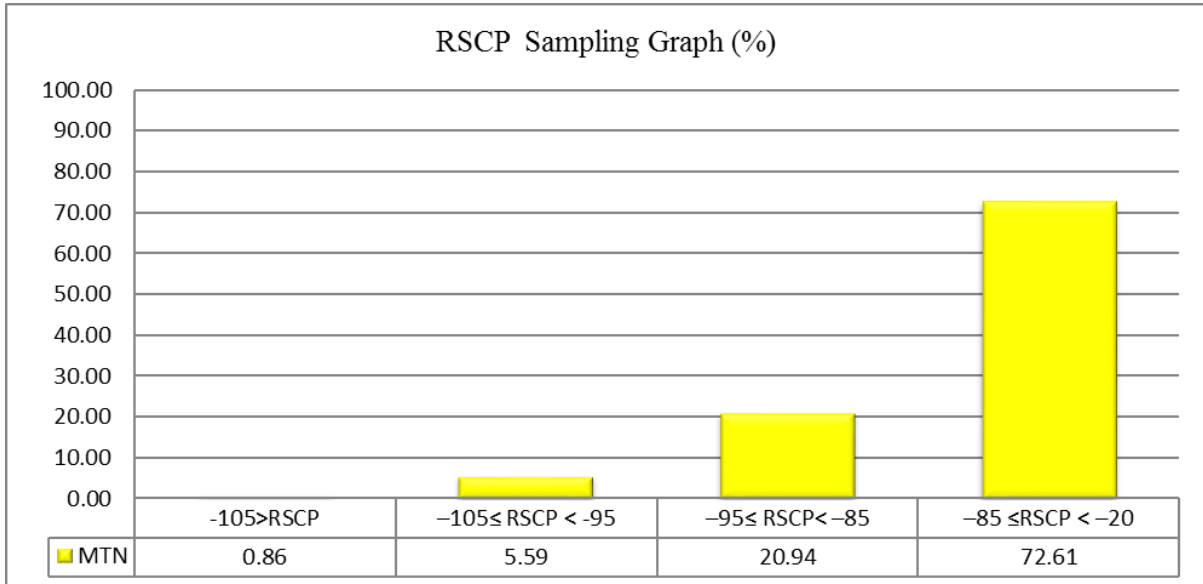


Remarks: Fair 3G coverage at Sefwi Wiawso which needs to be improved.

APPENDIX II

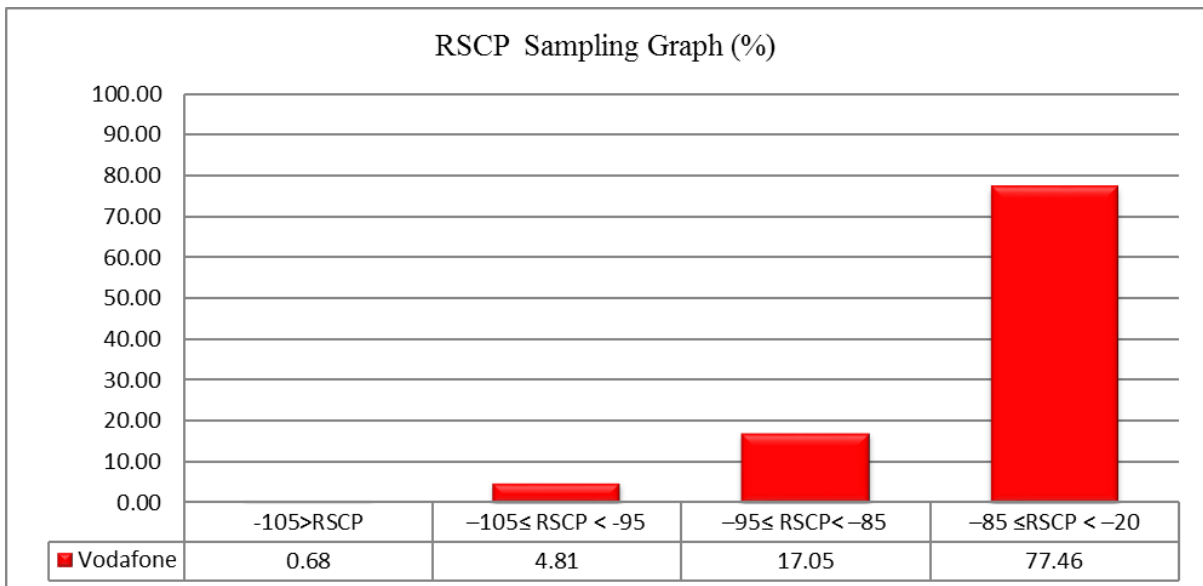
RSCP SAMPLING DISTRIBUTION

Fig 87- MTN 3G Coverage Samples Plot in the Western Region



Remarks: MTN recorded its highest count of RSCP samples in the range $-85 \leq RSCP < -20$ dBm; representing “Good” coverage across most of the district capitals tested.

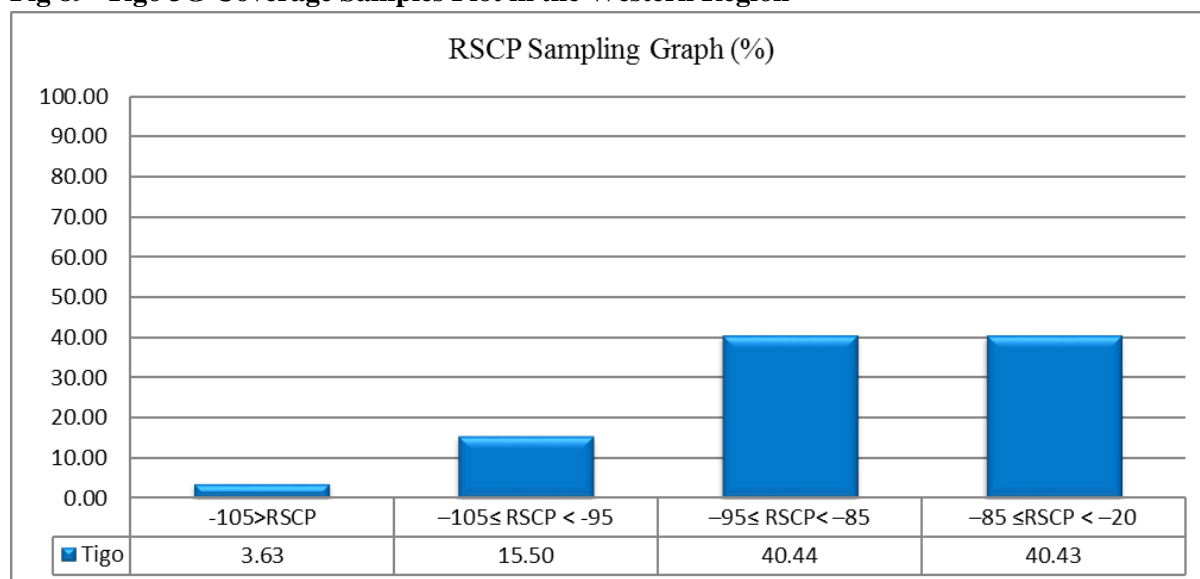
Fig 88- Vodafone 3G Coverage Samples Plot in the Western Region



Remarks: Vodafone recorded its highest count of RSCP samples in the range $-85 \leq RSCP < -20$ dBm; representing “Good” coverage across most of the district capitals tested.

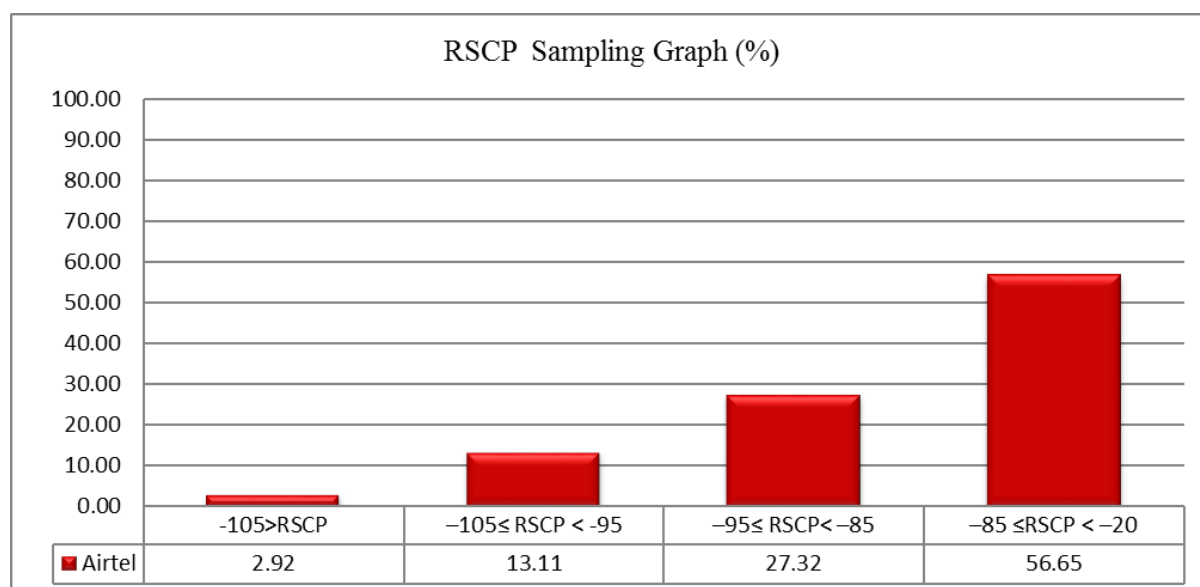
3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 89- Tigo 3G Coverage Samples Plot in the Western Region



Remarks: Tigo recorded its highest count of RSCP samples in the range $-95 \leq \text{RSCP} < -85$ dBm; representing “Fair” coverage across most of the district capitals tested.

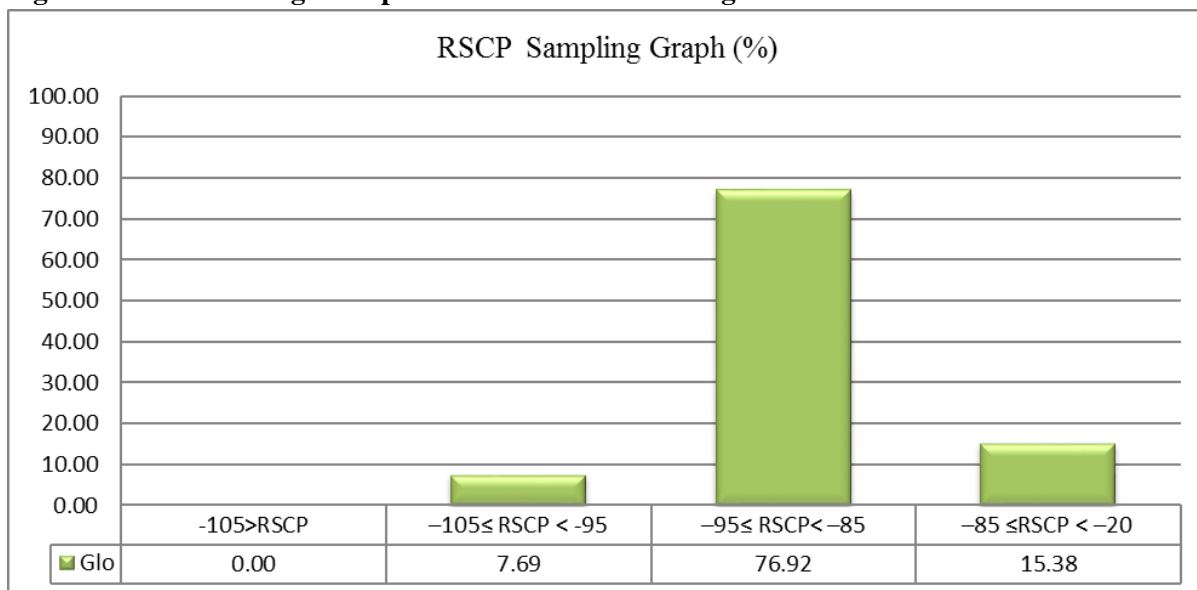
Fig 90- Airtel 3G Coverage Samples Plot in the Western Region



Remarks: AIRTEL recorded its highest count of RSCP samples in the range $-85 \leq \text{RSCP} < -20$ dBm; representing “Good” coverage across most of the district capitals tested.

3G COVERAGE ASSESSMENT OF CELLULAR MOBILE SERVICES IN WESTERN REGION, SEPTEMBER 2016

Fig 91- Glo 3G Coverage Samples Plot in the Western Region



Remarks: GLO recorded its highest count of RSCP samples in the $-95 \leq \text{RSCP} < -85$ RSCP dBm, representing “Fair” coverage across most of the district capitals tested.