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Quality of Service Report:

Gauteng 2012

Quarter 2

1. Introduction

1.1 Executive Summary

In Quarter 2 the Authority conducted Quality of Service (QoS) monitoring of the GSM Telephony service offered by Cell-C, MTN and Vodacom in the Gauteng region. The Monitoring period commenced on 18/07/2012 and concluded on 27/08/2012 and was limited to East Rand, West Rand, Midrand, Vaal Triangle and Pretoria.

QoS is defined as the collective effect of service performances which determine the degree of satisfaction of a user of the service. QoS provides an indication of what the customer experiences when using the mobile network and is evaluated in terms of retainability and accessibility. Retainability is defined as the ability for a call to stay connected, complete through to a normal call tear down process, without abnormally disconnecting on a cell site of interest¹. Accessibility is defined as the percentage of time a user is rejected due to the unavailability of system resources when attempting to place a call². The KPI parameters used to measure retainability and accessibility were Drop Call Rate (DCR) and Call Setup Success Rate (CSSR), respectively. THE DCR parameter is regulated by the End-User and Subscriber Service charter regulations of 2009 whilst the CSSR parameter is not regulated by End-User and Subscriber Service charter regulations of 2009; however, it has been incorporated as per ITU recommendations E.800 and G.1000.

2. Results and Analysis

The summary of the operators' overall performance arising from the specific quality of service parameters and the measured data is shown in tables 1 and 2 below:

Table 1: Accessibility Measurement Data

Region	Network Operator	CSSR	Target (%)
Gauteng	Vodacom	99.13%	95%
	MTN	95.06%	95%
	Cell-C	97.53%	95%

¹ Annexure B.2 of ETSI EG 202 057-3

² GSM 12.04, ETS 300 615.

Table 2: Retainability: Measurement Data

Region	Network Operator	DCR	Target (%)
Gauteng	Vodacom	0.41%	3%
	MTN	0.21%	3%
	Cell-C	0.93%	3%

2.1.1 Accessibility

Accessibility statistics for the test area are given in figure 1 below.

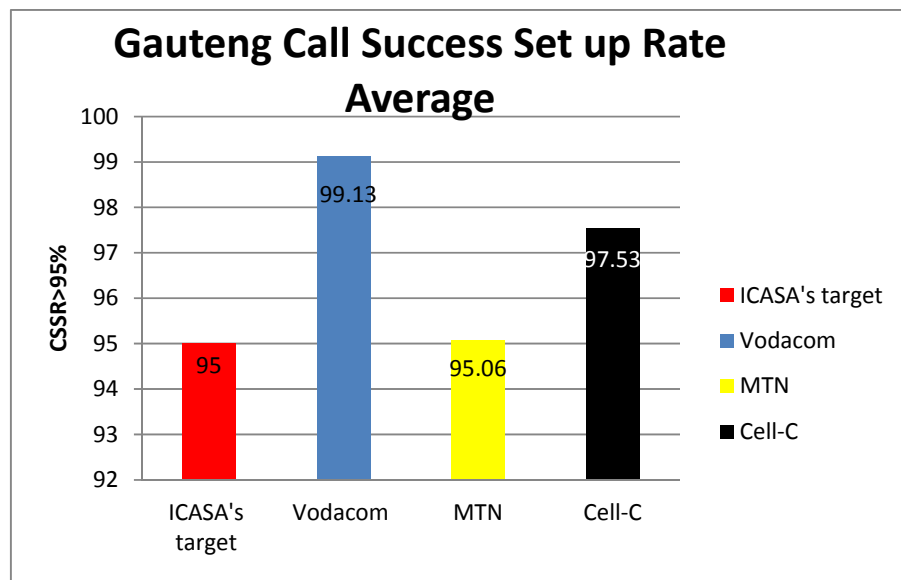


Figure 1: Accessibility Statistics

Based on the results above all operators are above the target. Ideally the Call setup Success Rate should be greater than 95%.

2.1.2 Retainability

Retainability for voice is measured in terms of dropped calls. The dropped call statistics on Eastern Cape's network in the test area are reflected in Figure 2 below.

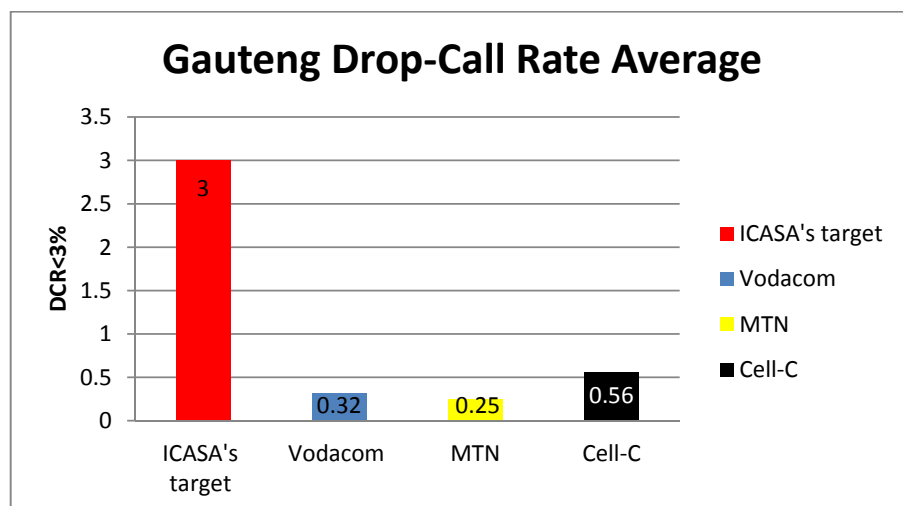


Figure 2: Retainability Statistics

The Drop Call Rate should be less than 3% over 6 months. Based on only the snapshot results of this monitoring exercise, the operators are all above the target.

3. Conclusion

The Gauteng QoS monitoring focused on the following KPI's; Call Set-up Success Rate (CSSR) and Dropped Call Rate (DCR) in the tested areas. All operators attained the QoS target in terms of Retainability and Accessibility KPI's.

The test methodology adopted provides a snapshot view of the operators Quality of Service, giving a realistic picture of network performance from a user's point of view. The drive test results do not represent the mobile service provider's overall network performance, and is based on specified routes, time of day and particular type of handset.

4. Appendix A (coverage maps)

Gauteng: Maps of Signal Level

Retainability

(i) West Rand Route

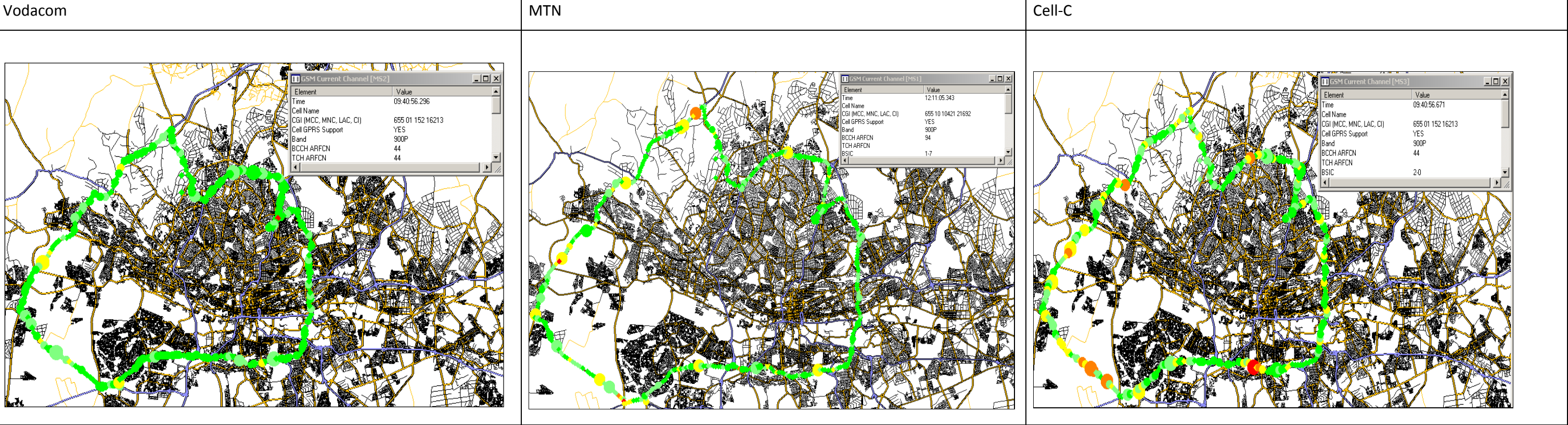
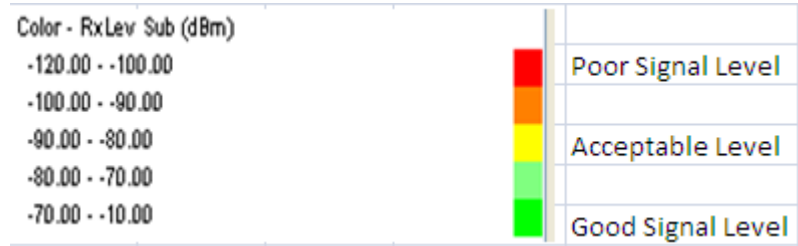


Figure 3: West Rand Route maps



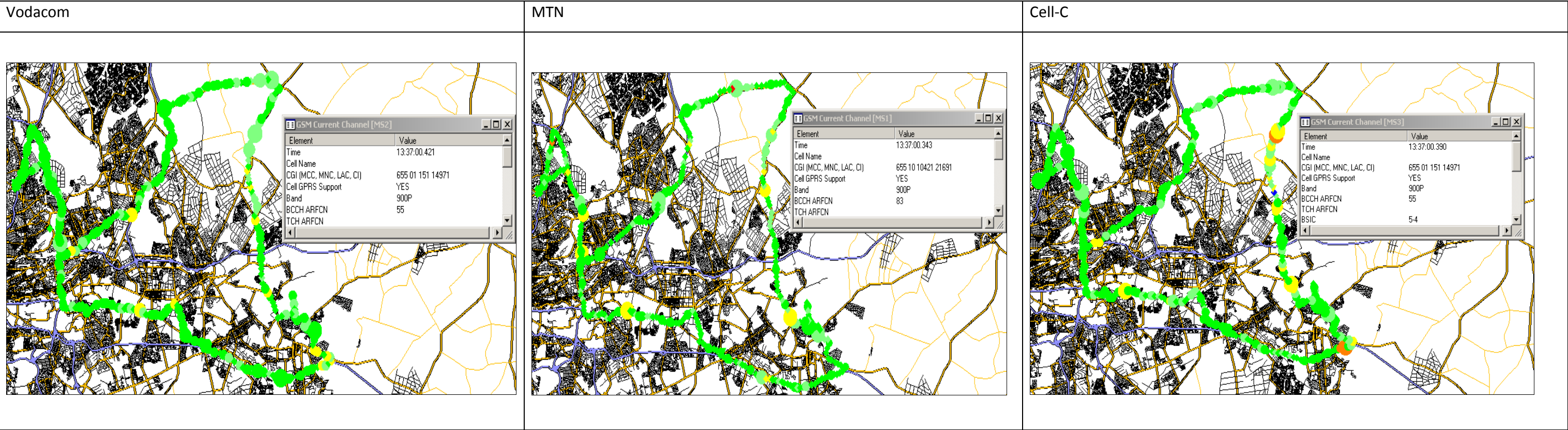
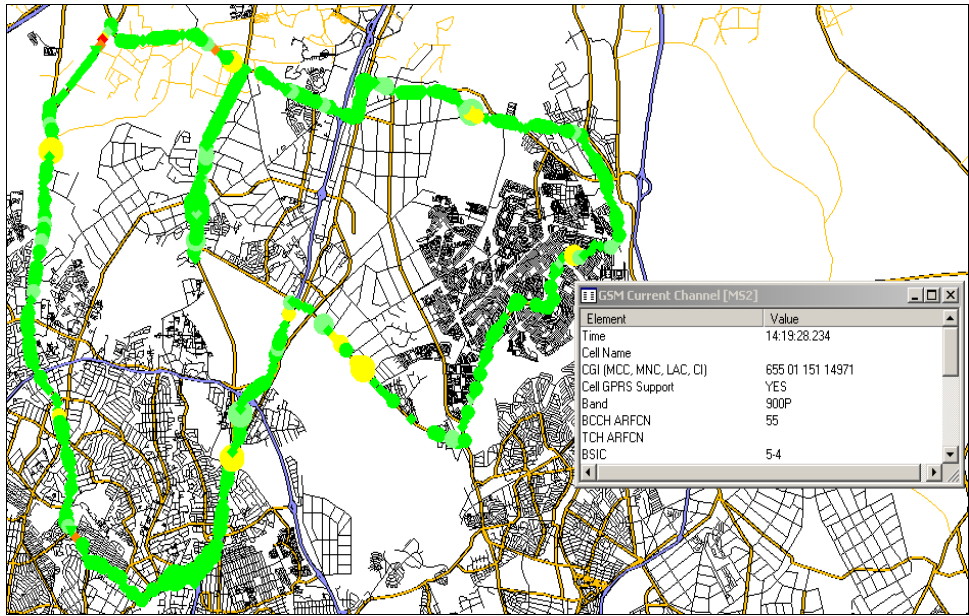


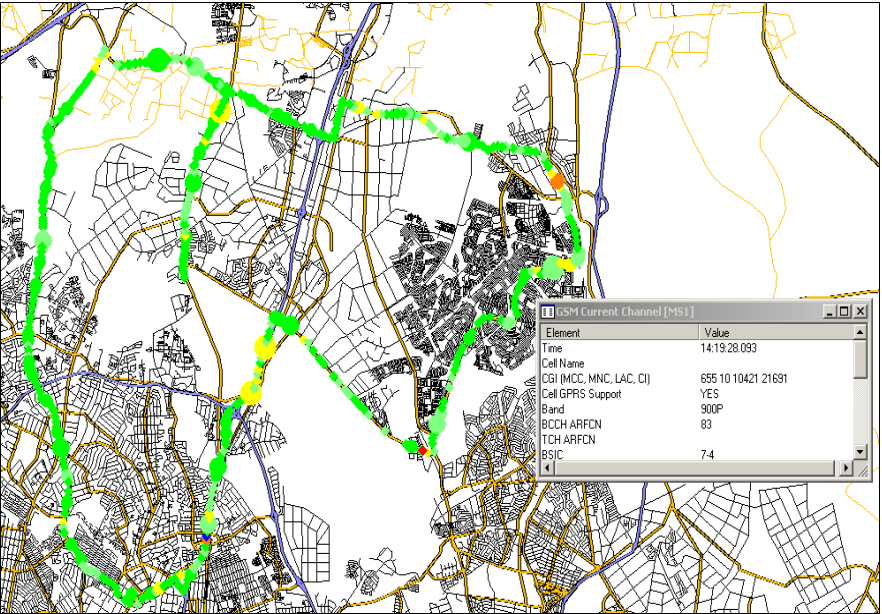
Figure 4: East Rand maps



Vodacom



MTN



Cell-C

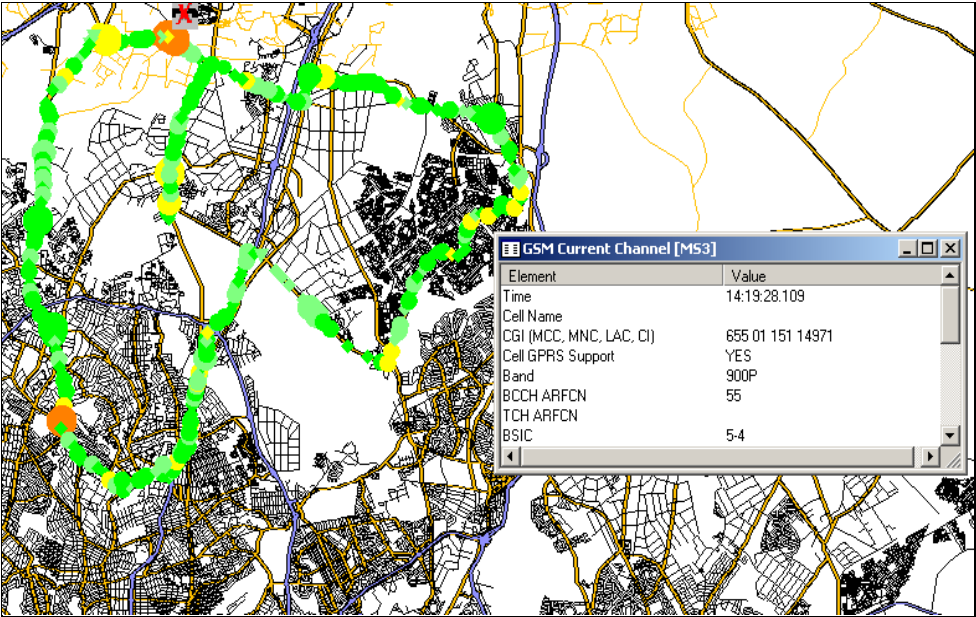
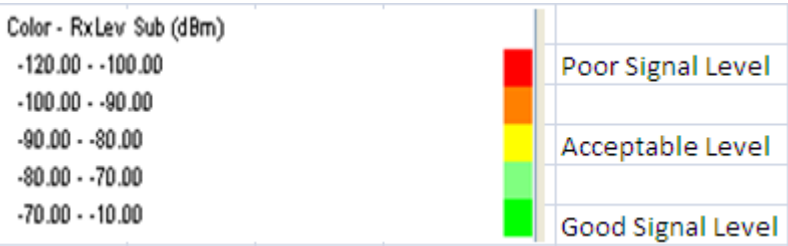


Figure 5: Midrand maps



(iv) Vaal Triangle

(a) Vereeniging – Sasolburg

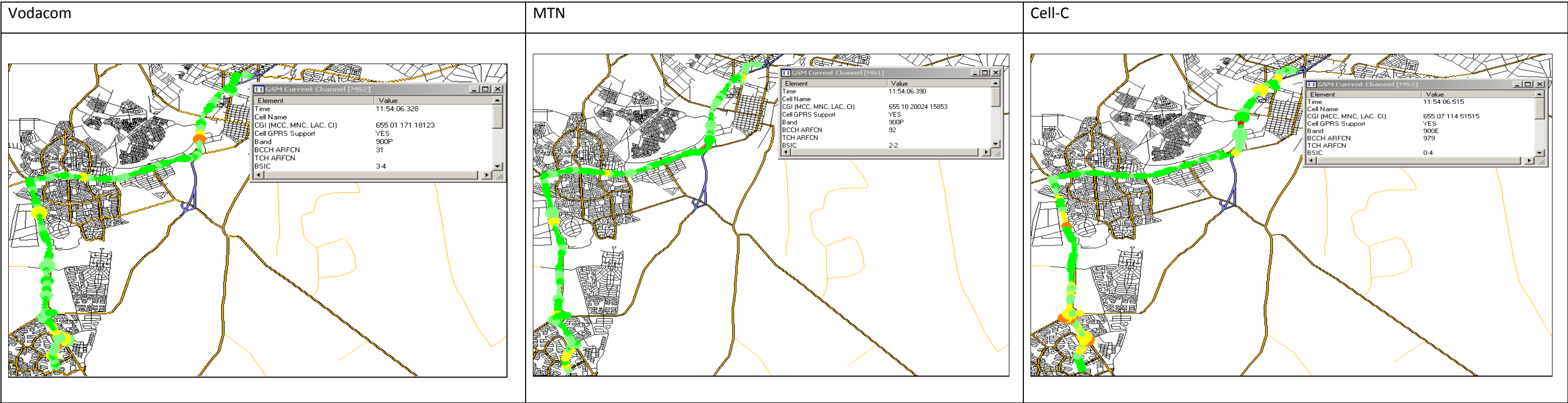
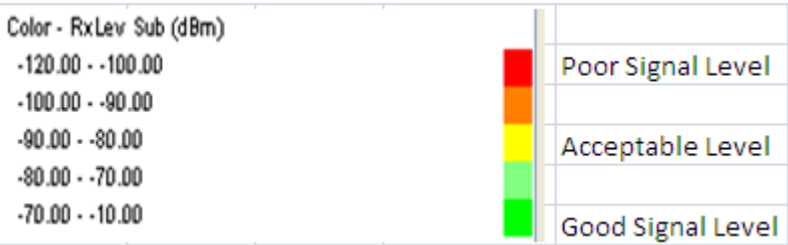


Figure 6: Vereeniging – Sasolburg maps



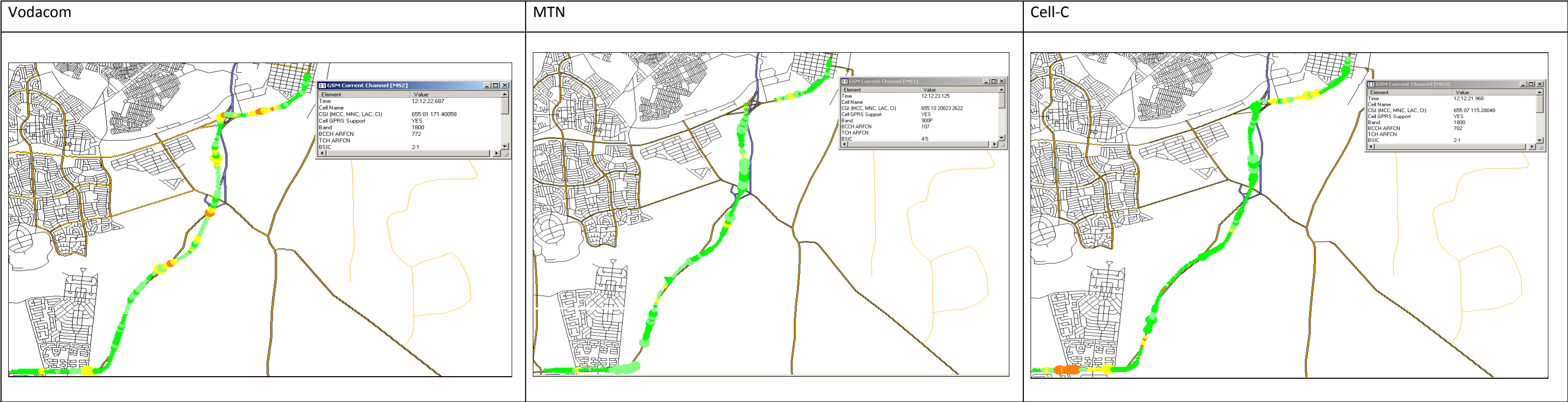


Figure 7: Sasolburg – Vereeniging maps



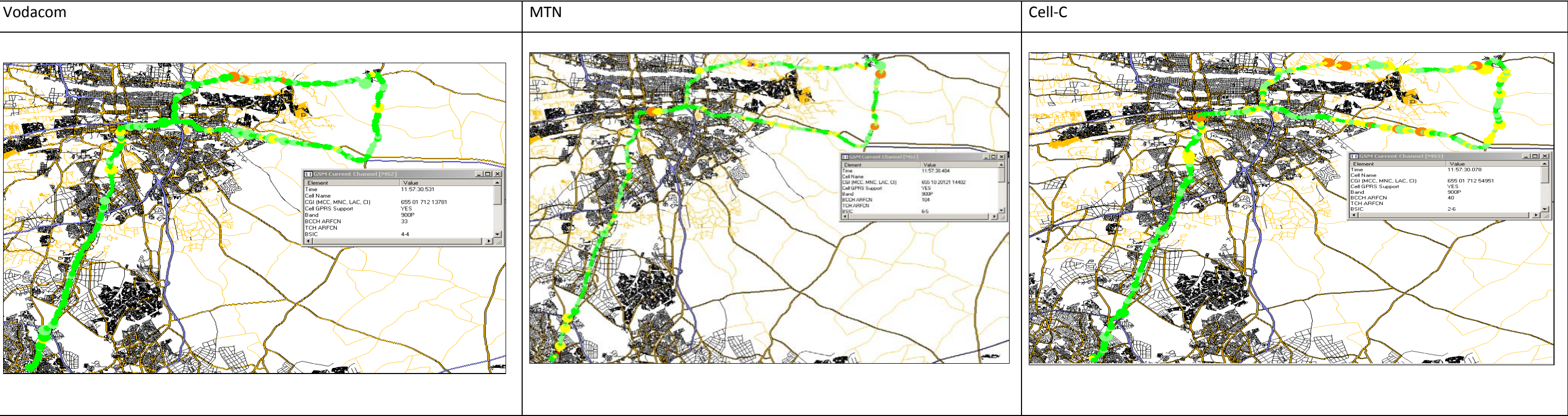
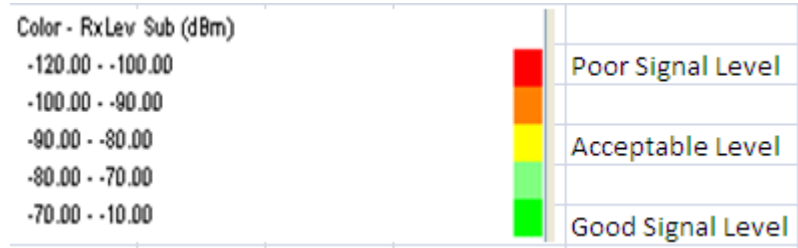


Figure 8: Pretoria maps



Accessibility

(I) West Rand Route

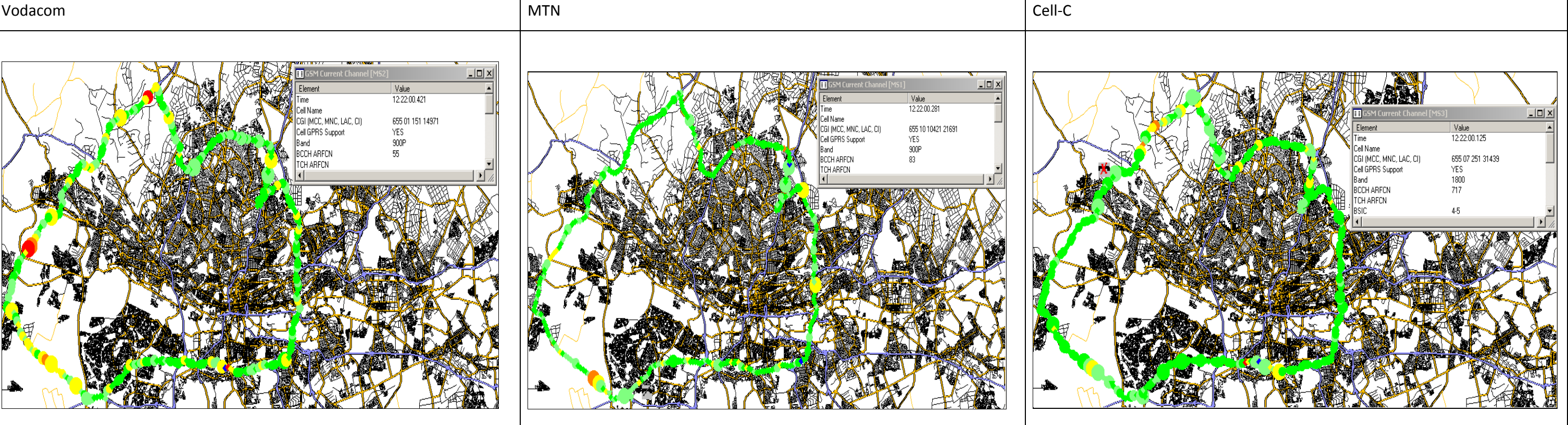
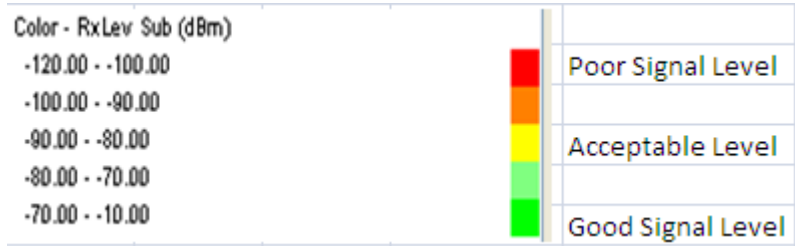


Figure 9: West Rand Route maps



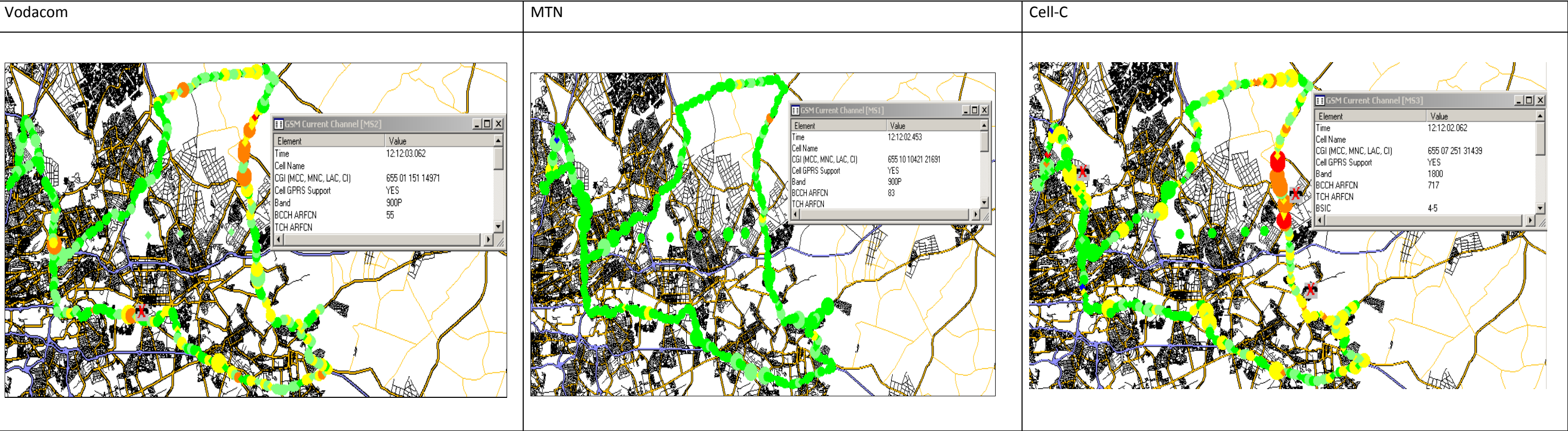
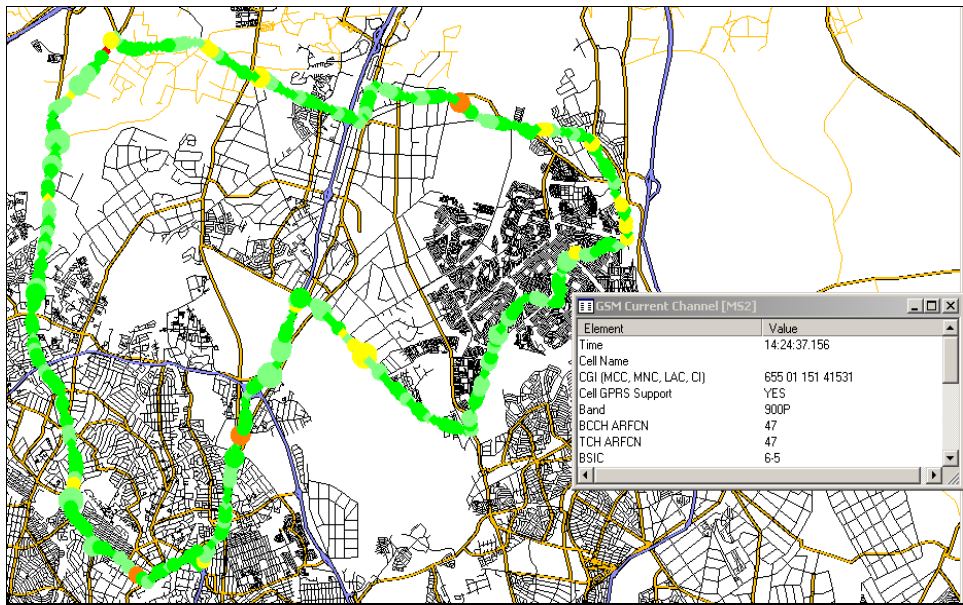


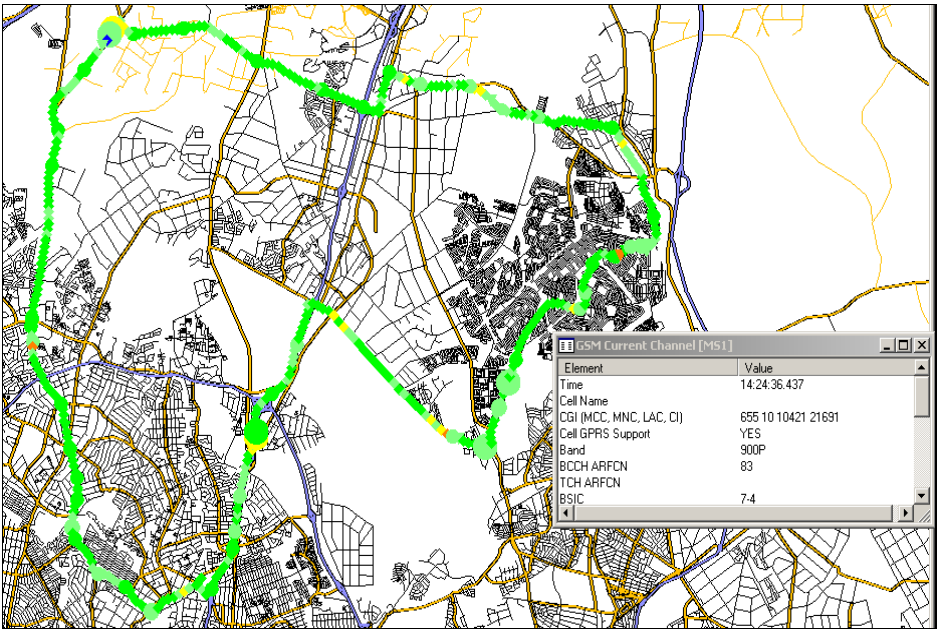
Figure 10: East Rand maps



Vodacom



MTN



Cell-C

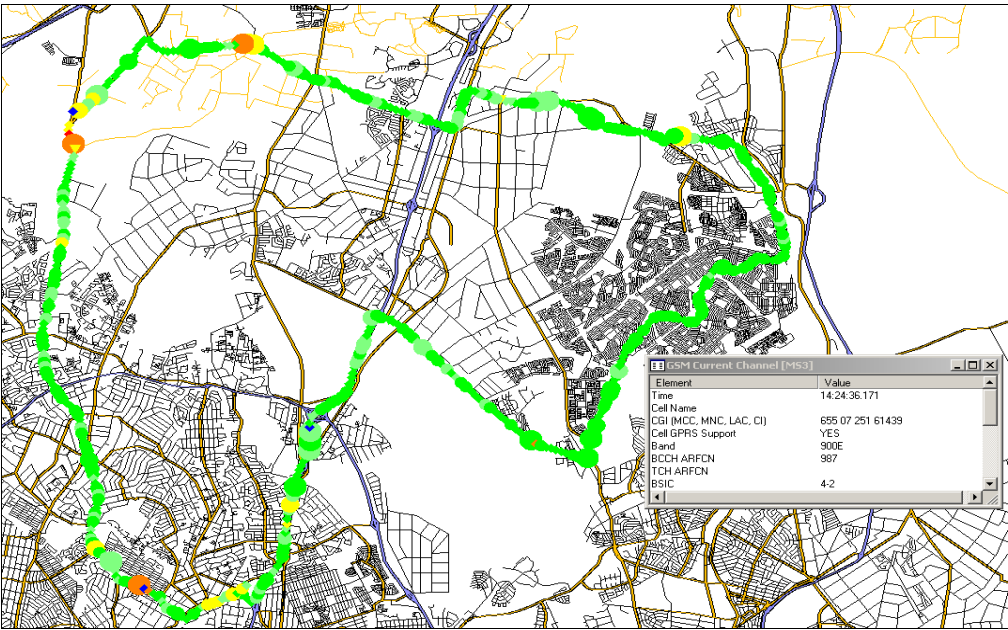
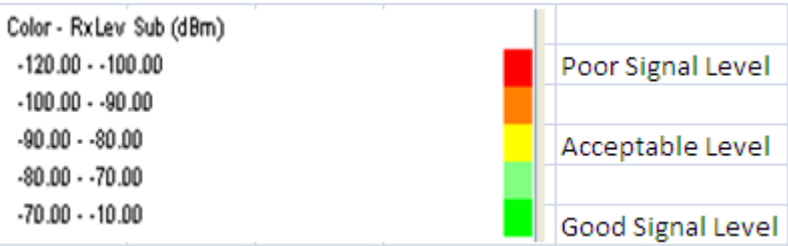


Figure 11: Midrand maps



(iv) Vaal Triangle

(a) Vereeniging – Sasolburg (R59 FREEWAY)

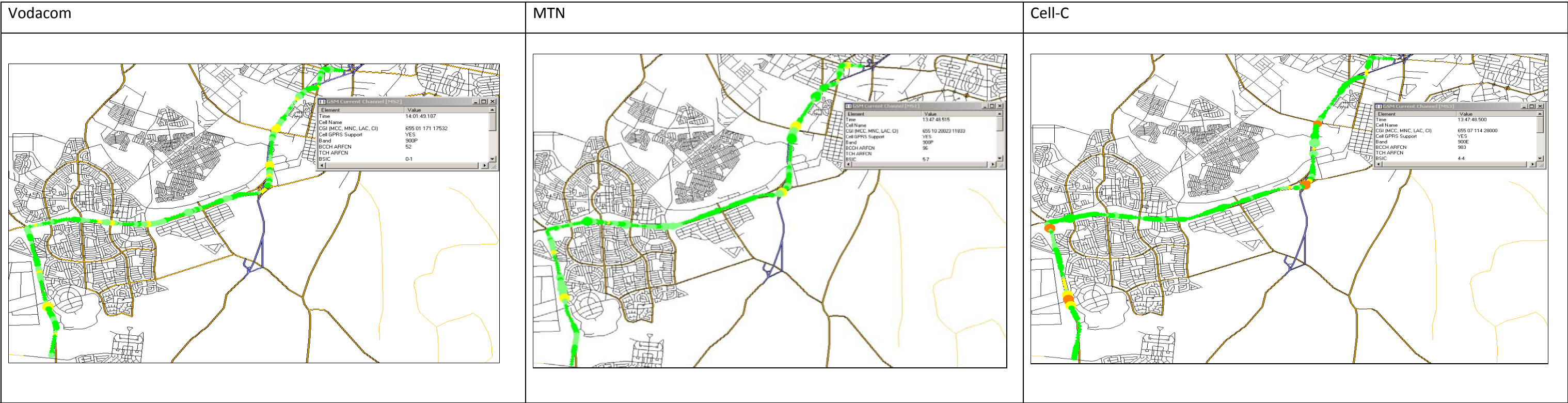
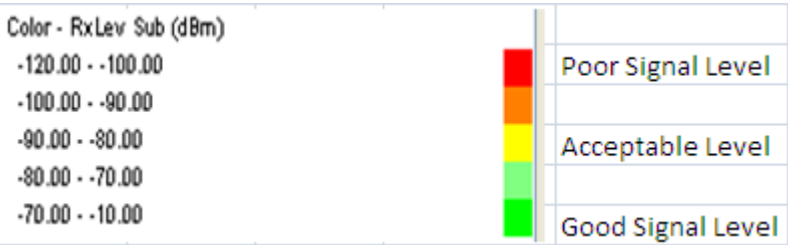


Figure 12: Vereeniging – Sasolburg (R59 FREEWAY) maps



(b) Sasolburg R59 FREEWAY - Vereeniging

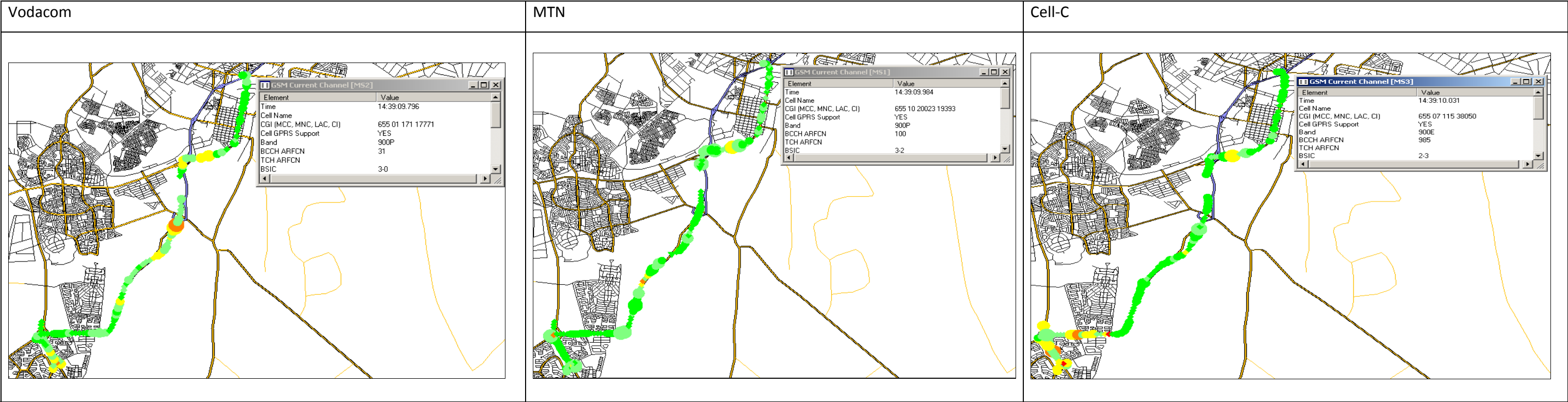
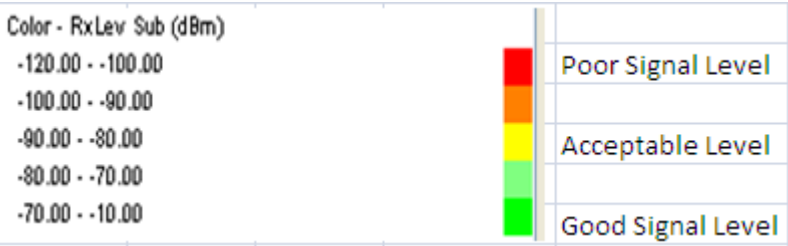


Figure 13: Sasolburg R59 FREEWAY– Vereeniging maps



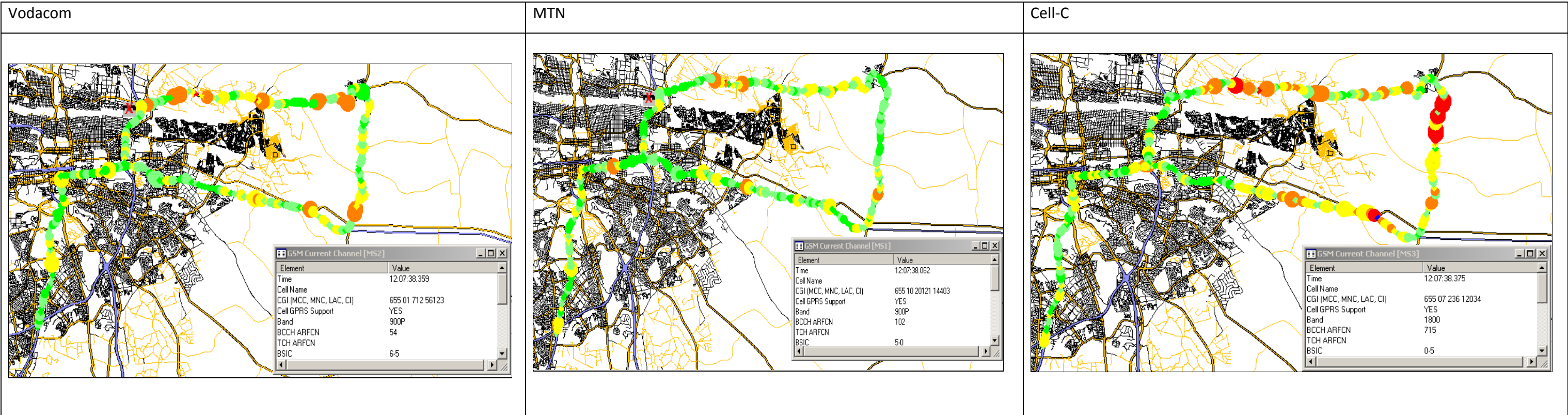


Figure 14: Pretoria maps

