

The information is also available in Anacom's Internet website in:

<http://www.anacom.pt/template12.jsp?categoryId=186283>

Appendix

Individual results, results by urban agglomeration and road axel.

September / October 2005

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I DEFINITIONS

MOS	<i>Mean Opinion Score</i> – Audio quality rate of an end-to-end type of communication. Its value is 0 when there is no communication and 5 when the communication is perfect. Values 0 and 5 are only theoretical and thus never show on the measurements. Data presented refers to average values per call.
Routed Calls:	Telephone calls successfully established by the network and between the two relevant ends ("The call reached the called terminal").
Abandoned during Conversation:	Telephone calls successfully established by the network but dropped during the conversational phase.
Normal Termination:	Telephone calls successfully established by the network and terminated normally.
Not Routed Calls:	Telephone calls not established between the two relevant ends ("The call did not reach the called terminal").
Dropped Calls:	Calls that were dropped, either in the establishment phase or in the conversational phase.
Call Ending Causes:	Reasons leading to the communications drop.
No Service:	Out of service (no signal).
Congestion:	Network congestion.
Radio Link Failure:	Failure in the Radio link between the mobile terminal and the base station. It may occur when crossing a shadow zone of the relevant network.
Other :	Other causes for call dropping.
RSSI Signal Level (dBm):	Received Signal Strength Indication – Indicates the strength of the signal received at the mobile terminal.
BCCH	<i>Broadcast Control Channel</i> – Routs information to all mobile terminals (MSs) served by a certain BTS (<i>Base Transceiver Station</i>). It is downlinked and carries several parameters, such as: CI (<i>Cell Identity</i>), LAC (<i>Local Area Code</i>), MCC (<i>Mobile Country Code</i>), MNC (<i>Mobile Network Code</i>), FH (<i>Frequency Hopping</i>) Algorithm.
FTS	Fixed Telephone Service.
PSTN	Public Switched Telephone Network.

1 URBAN AGGLOMERATIONS

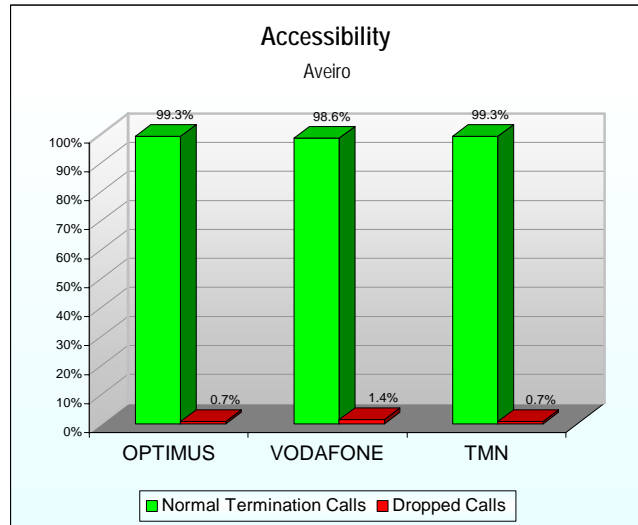
1.1 AVEIRO

Measurement Sessions on:

- 30 September 2005 between 9h04 and 12h11 and between 13h24 and 16h32

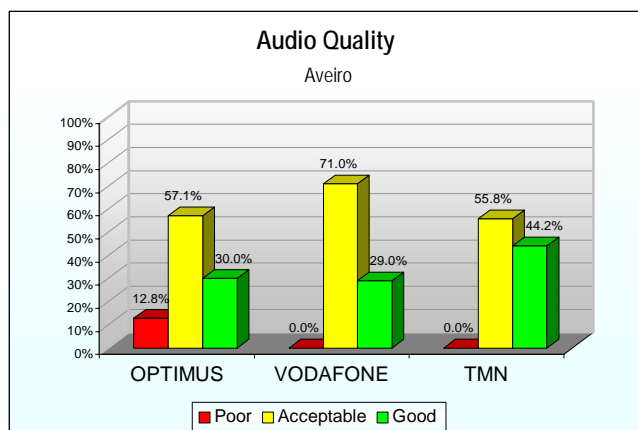
1.1.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	138 100%	138 100%	138 100%
Routed Calls	Total	137 99.3%	136 98.6%	137 99.3%	
	Abandoned During Conversation	0 0.0%	0 0.0%	0 0.0%	
	Normal Termination Calls	137 99.3%	136 98.6%	137 99.3%	
Non-Routed Calls		1 0.7%	2 1.4%	1 0.7%	
Dropped Calls	Total	1 0.7%	2 1.4%	1 0.7%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	1 0.7%	2 1.4%	1 0.7%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	0 0.0%	0 0.0%	0 0.0%



1.1.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	273 100%	272 100%	274 100%
Audio Quality (MOS)	Poor	35 12.8%	0 0.0%	0 0.0%	
	Acceptable	156 57.1%	193 71.0%	153 55.8%	
	Good	82 30.0%	79 29.0%	121 44.2%	

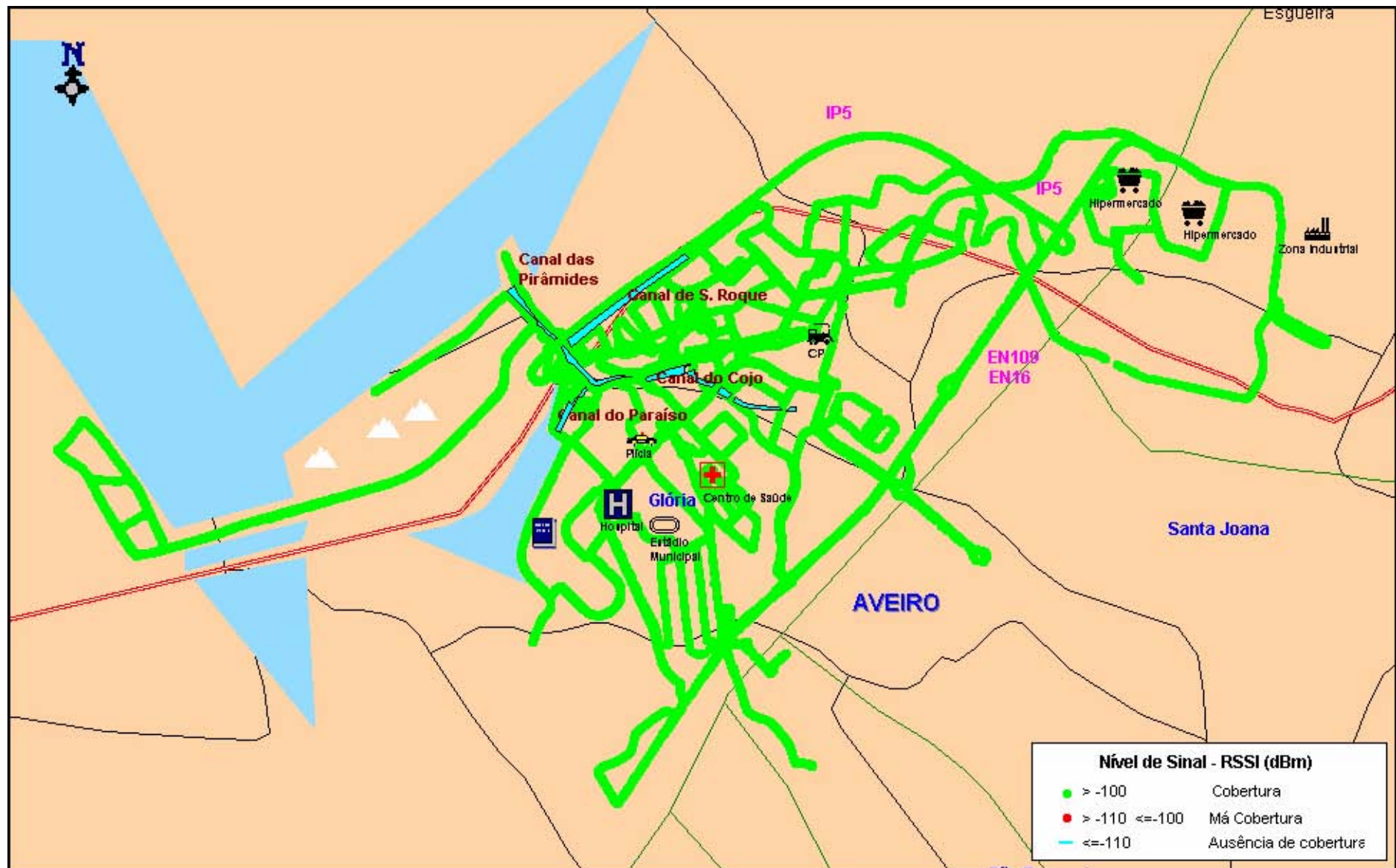


1.1.3 COVERAGE

(Following Pages)

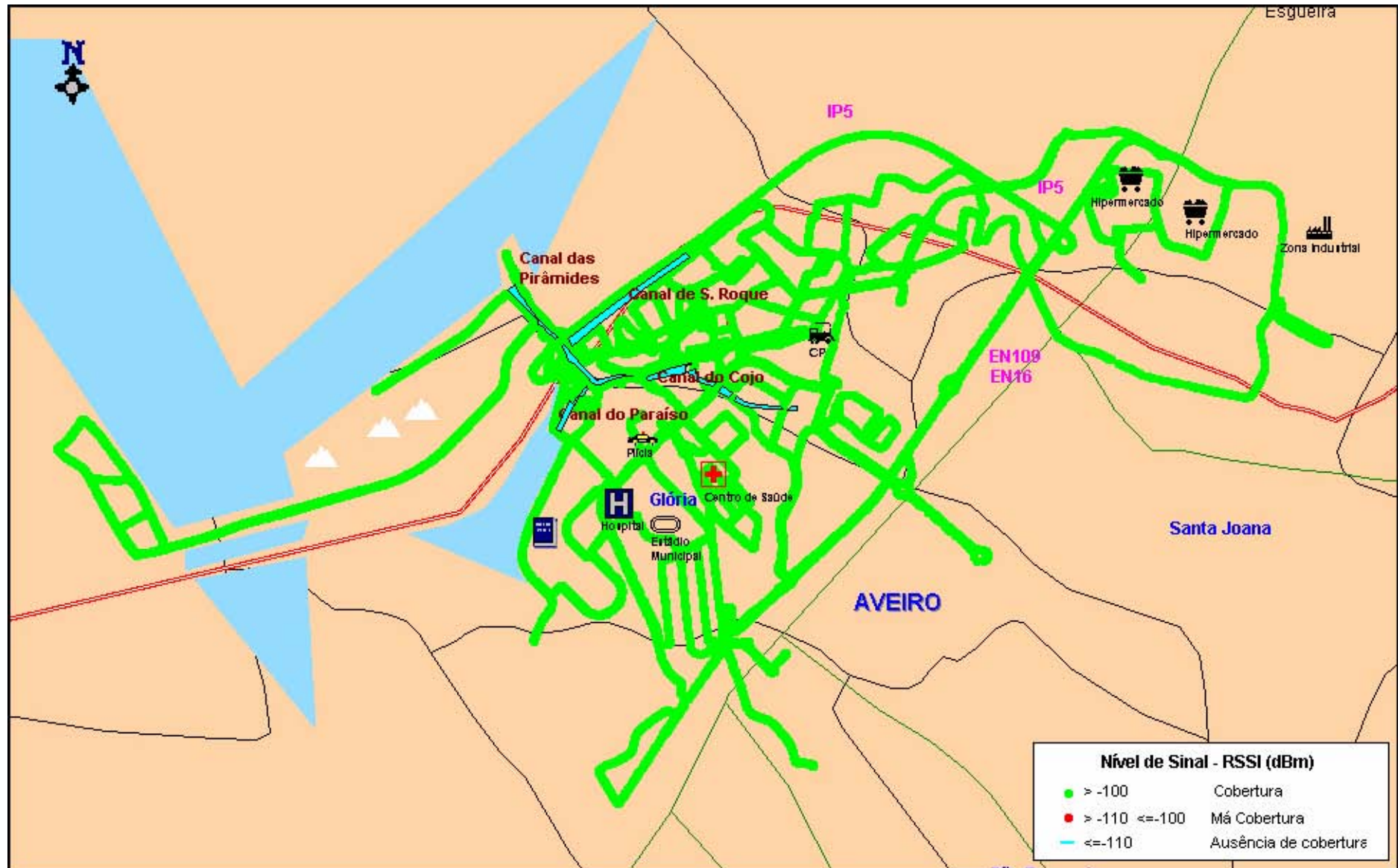
AVEIRO

OPTIMUS - PSTN



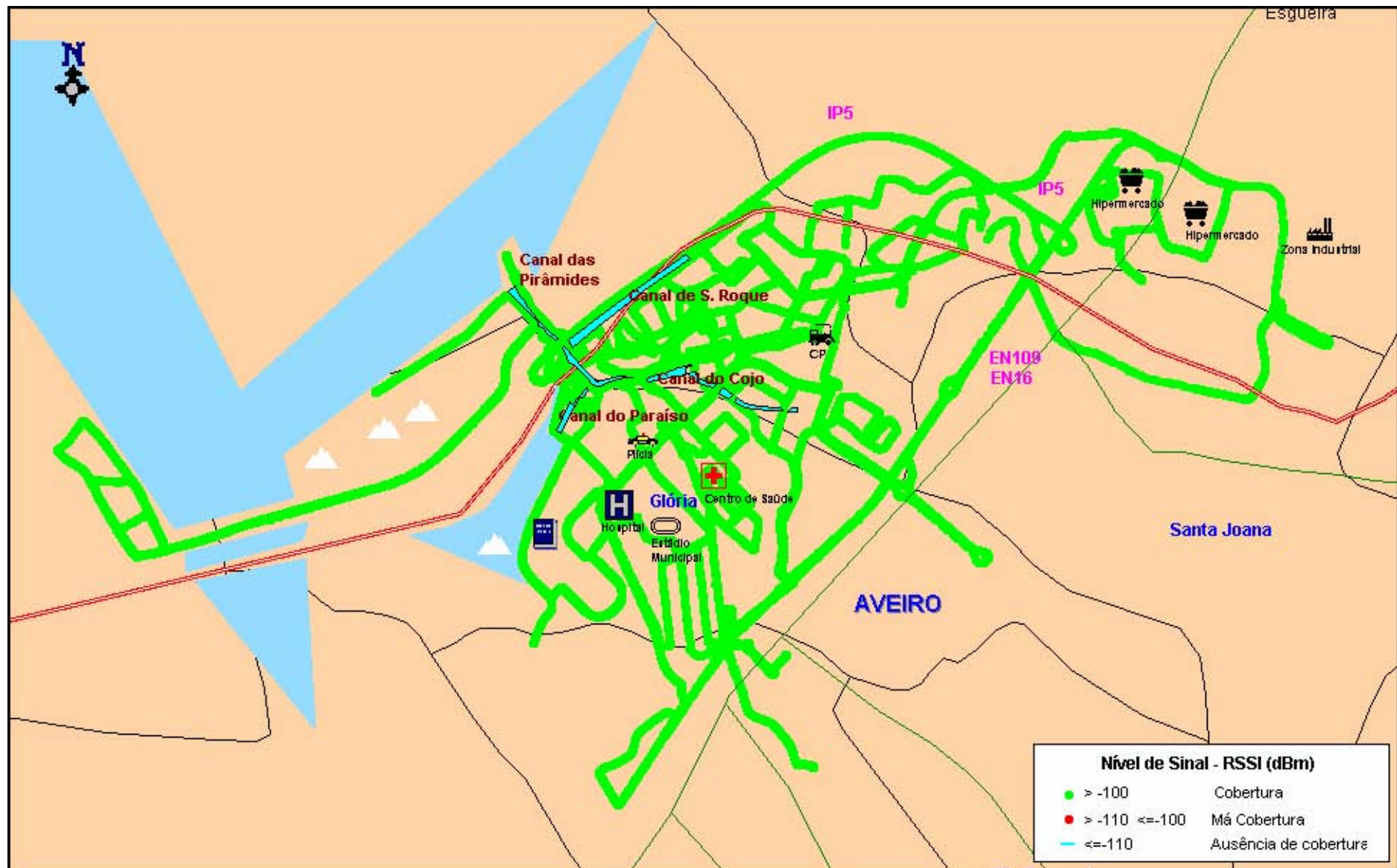
AVEIRO

VODAFONE - PSTN



AVEIRO

TMN - PSTN



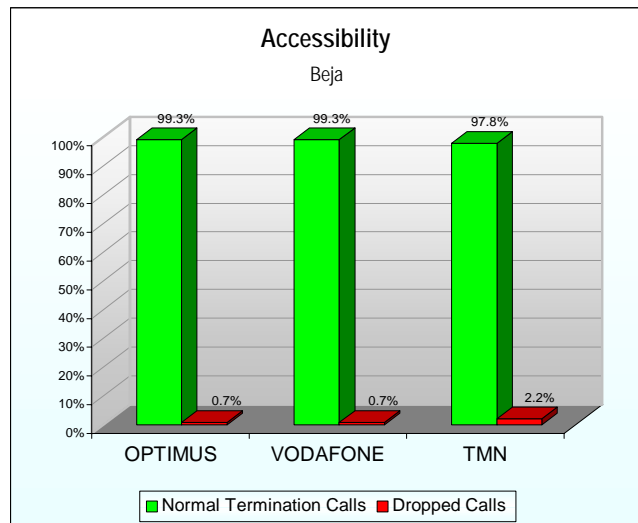
1.2 BEJA

Measurement Sessions on:

- 20 September 2005 between 9h42 and 12h48 and between 14h02 and 17h06

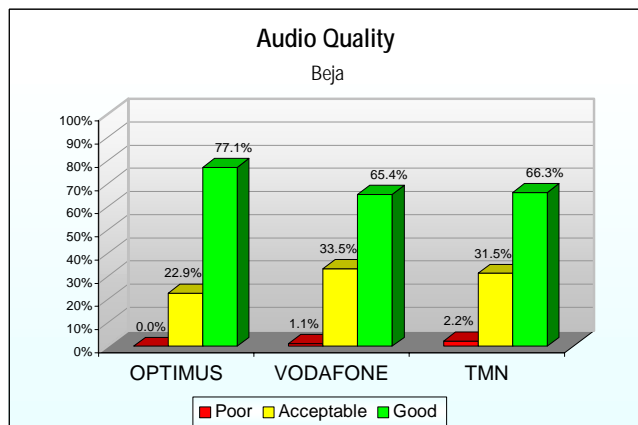
1.2.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	137 100%	137 100%	137 100%
Routed Calls	Total	136 99.3%	137 100.0%	135 98.5%	
	Abandoned During Conversation	0 0.0%	1 0.7%	1 0.7%	
	Normal Termination Calls	136 99.3%	136 99.3%	134 97.8%	
Non-Routed Calls		1 0.7%	0 0.0%	2 1.5%	
Dropped Calls	Total	1 0.7%	1 0.7%	3 2.2%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	1 0.7%	2 1.5%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	1 0.7%	0 0.0%	1 0.7%



1.2.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	271 100%	272 100%	270 100%
Audio Quality (MOS)	Poor	0 0.0%	3 1.1%	6 2.2%	
	Acceptable	62 22.9%	91 33.5%	85 31.5%	
	Good	209 77.1%	178 65.4%	179 66.3%	

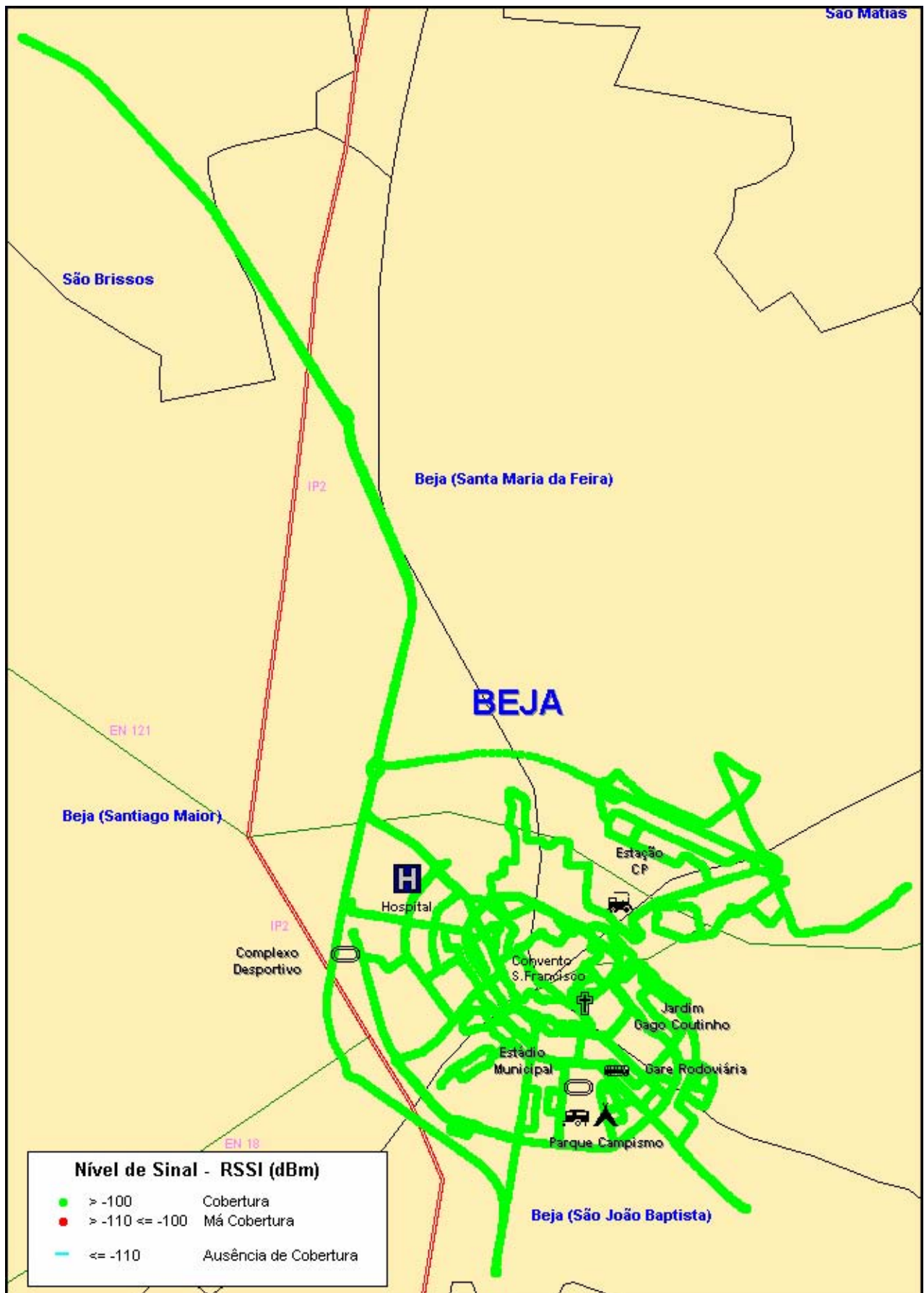


1.2.3 COVERAGE

(Following Pages)

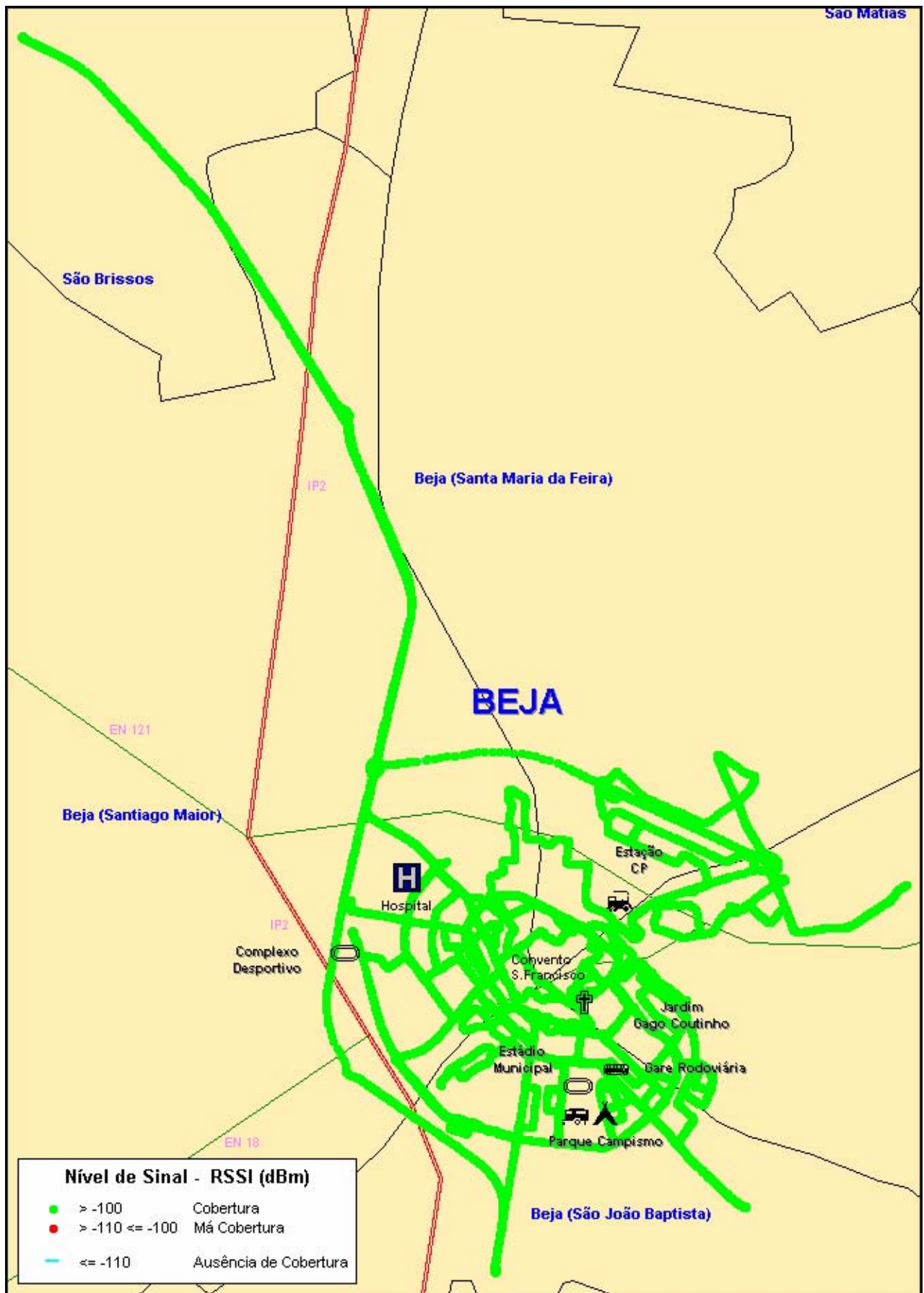
BEJA

OPTIMUS - PSTN



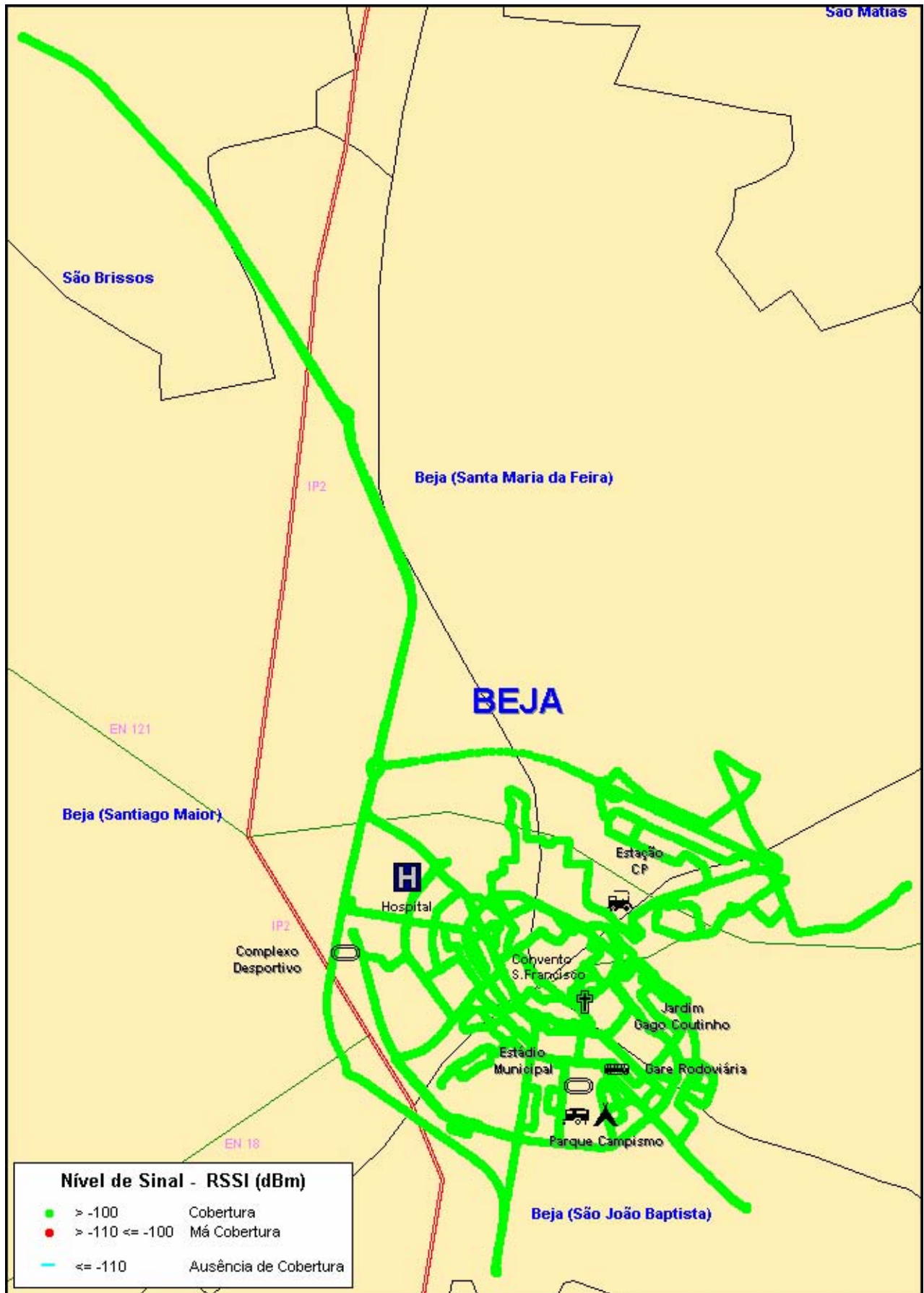
BEJA

VODAFONE - PSTN



BEJA

TMN - PSTN



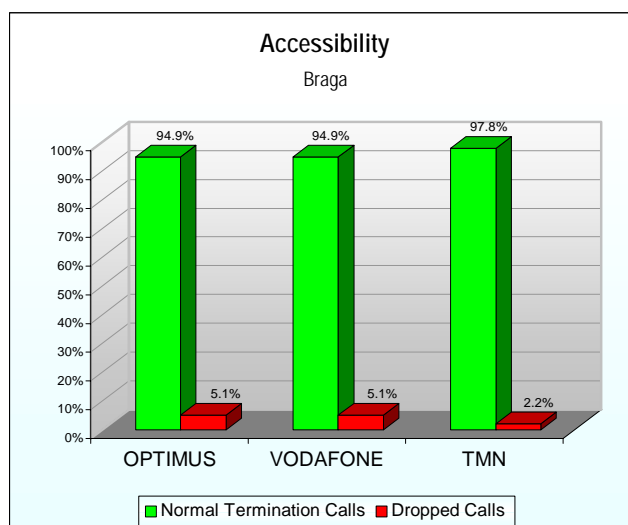
1.3 BRAGA

Measurement Sessions on:

- 13 October 2005 between 8h38 and 11h44 and between 12h47 and 15h54

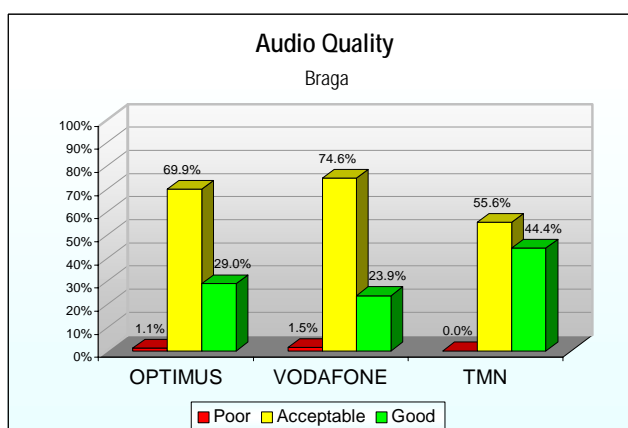
1.3.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	138 100%	138 100%	138 100%
Routed Calls	Total	135 97.8%	137 99.3%	135 97.8%	
	Abandoned During Conversation	4 2.9%	6 4.3%	0 0.0%	
	Normal Termination Calls	131 94.9%	131 94.9%	135 97.8%	
Non-Routed Calls			3 2.2%	1 0.7%	3 2.2%
Dropped Calls	Total	7 5.1%	7 5.1%	3 2.2%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	2 1.4%	4 2.9%	0 0.0%
		Radio Link Failure	2 1.4%	2 1.4%	0 0.0%
		Other	3 2.2%	1 0.7%	3 2.2%



1.3.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	269 100%	272 100%	270 100%
Audio Quality (MOS)	Poor	3 1.1%	4 1.5%	0 0.0%	
	Acceptable	188 69.9%	203 74.6%	150 55.6%	
	Good	78 29.0%	65 23.9%	120 44.4%	

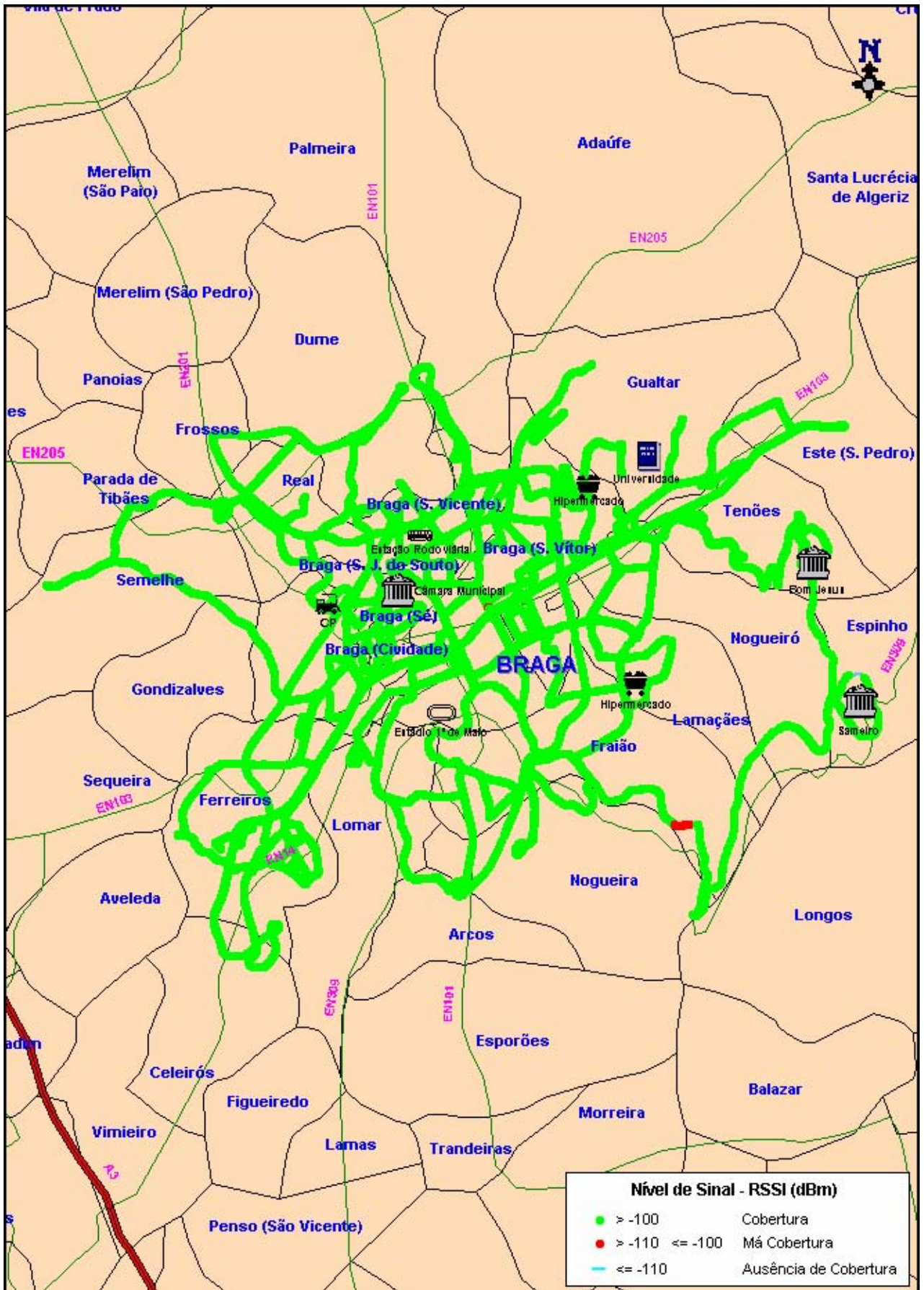


1.3.3 COVERAGE

(Following Pages)

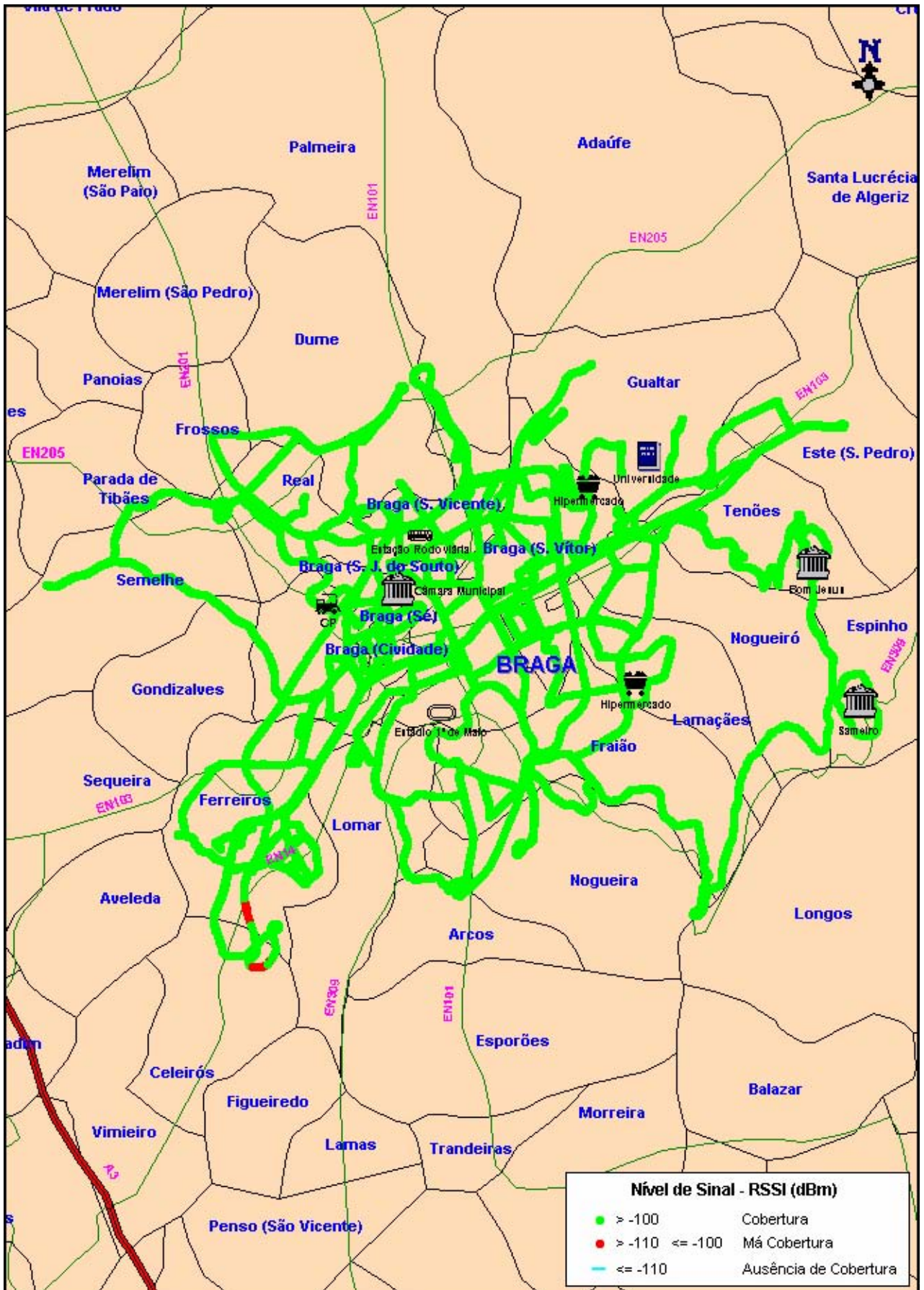
BRAGA

OPTIMUS - PSTN



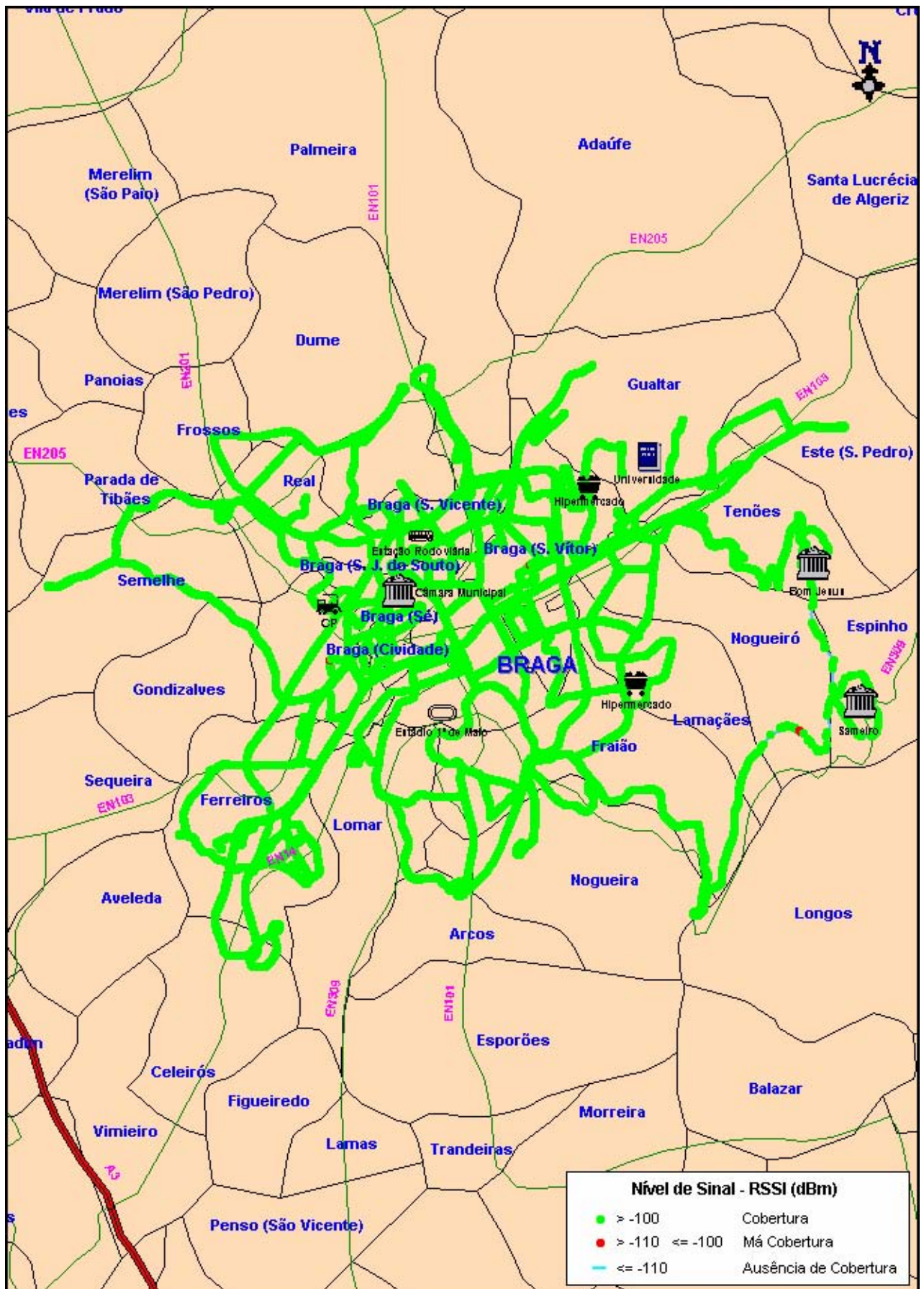
BRAGA

VODAFONE - PSTN



BRAGA

TMN - PSTN



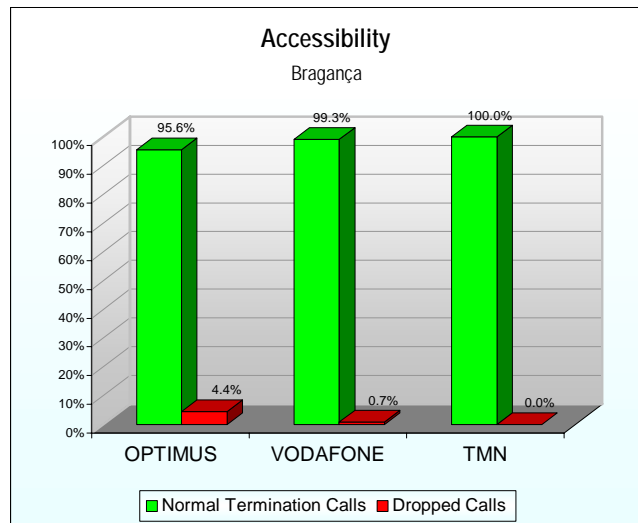
1.4 BRAGANÇA

Measurement Sessions on:

- 21 September 2005 between 13h13 and 16h16
- 22 September 2005 between 8h43 and 11h46

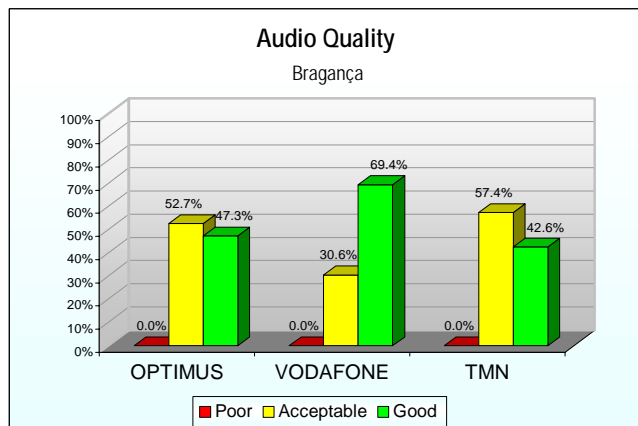
1.4.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	135 100%	135 100%	136 100%
Routed Calls	Total	129 95.6%	134 99.3%	136 100.0%	
	Abandoned During Conversation	0 0.0%	0 0.0%	0 0.0%	
	Normal Termination Calls	129 95.6%	134 99.3%	136 100.0%	
Non-Routed Calls		6 4.4%	1 0.7%	0 0.0%	
Dropped Calls	Total	6 4.4%	1 0.7%	0 0.0%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	1 0.7%	0 0.0%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	6 4.4%	0 0.0%	0 0.0%



1.4.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	258 100%	268 100%	272 100%
Audio Quality (MOS)	Poor	0 0.0%	0 0.0%	0 0.0%	
	Acceptable	136 52.7%	82 30.6%	156 57.4%	
	Good	122 47.3%	186 69.4%	116 42.6%	

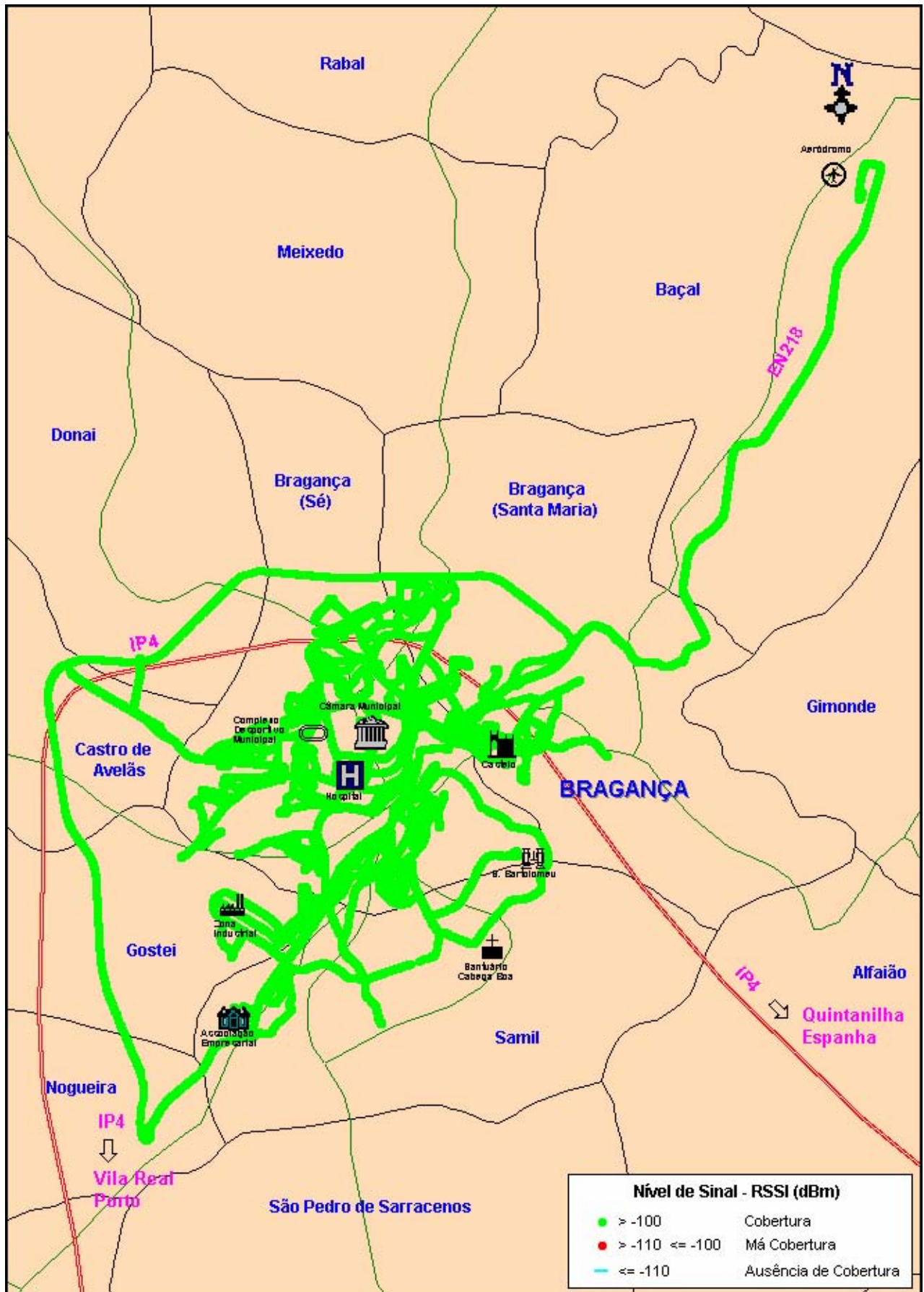


1.4.3 COVERAGE

(Following Pages)

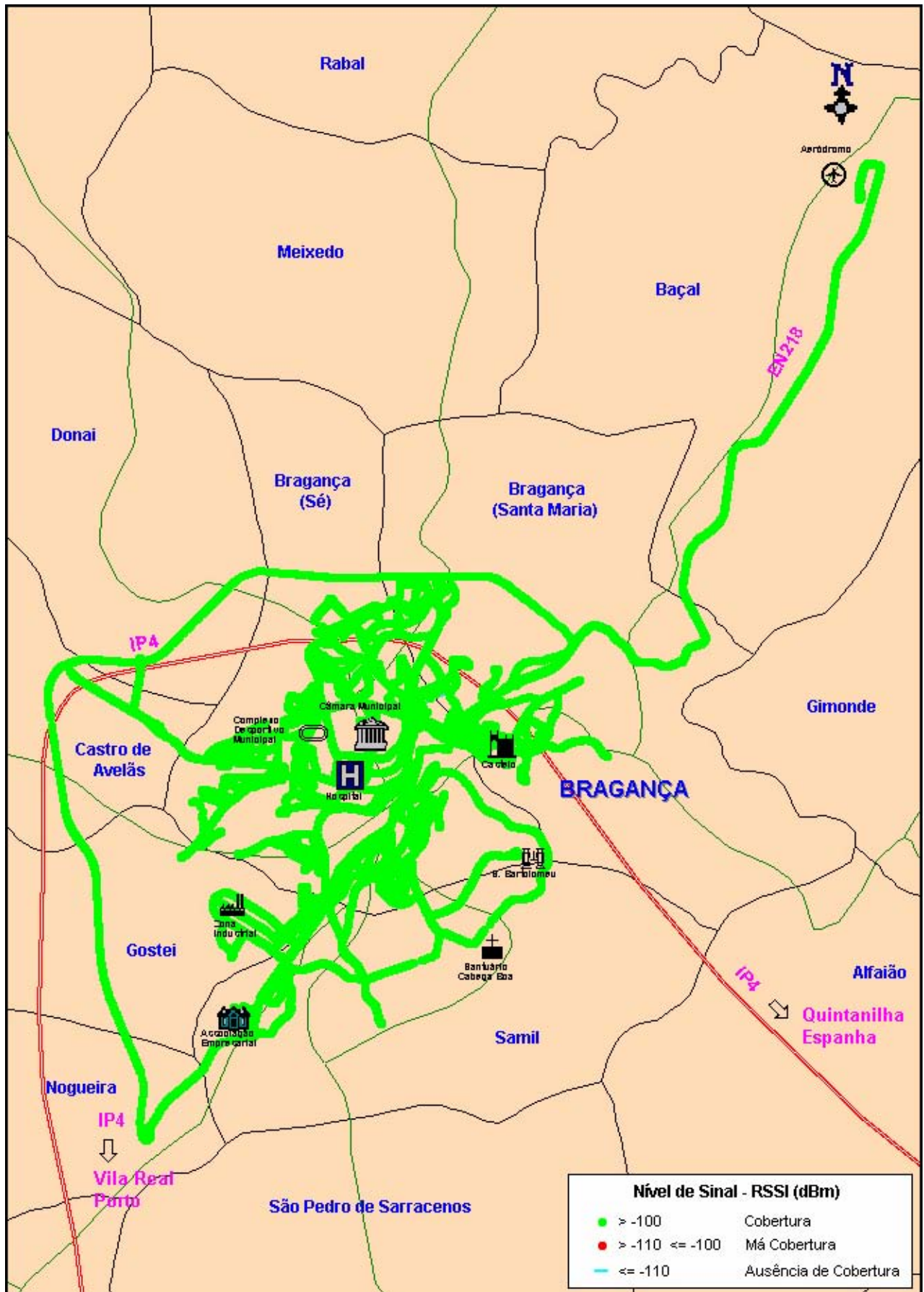
BRAGANÇA

OPTIMUS - PSTN



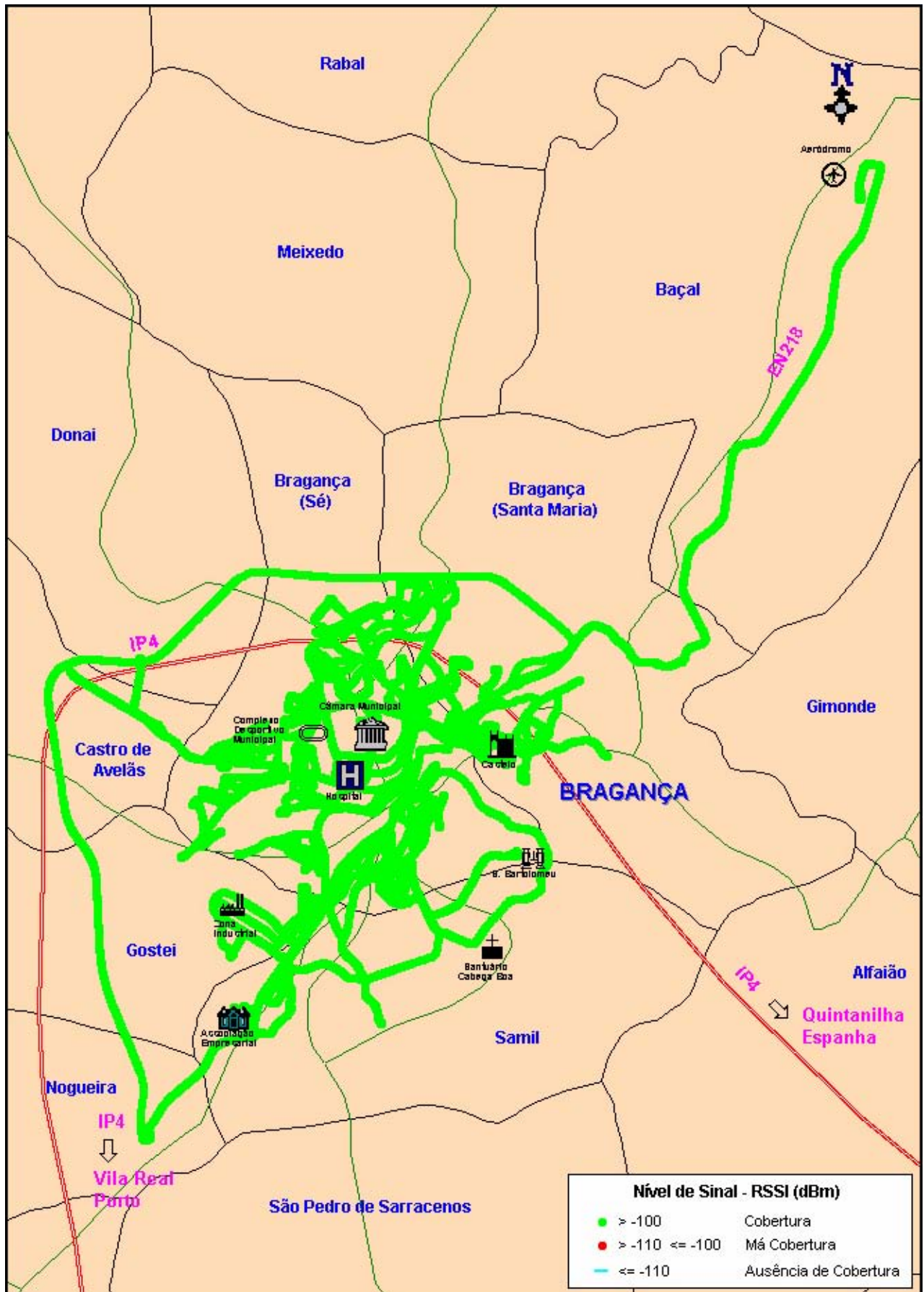
BRAGANÇA

VODAFONE - PSTN



BRAGANÇA

TMN - PSTN



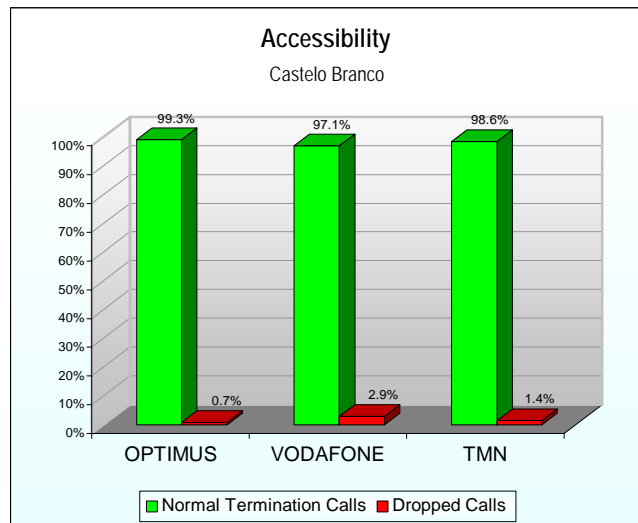
1.5 CASTELO BRANCO

Measurement Sessions on:

- 13 October 2005 between 9h30 and 12h39 and between 14h22 and 17h27

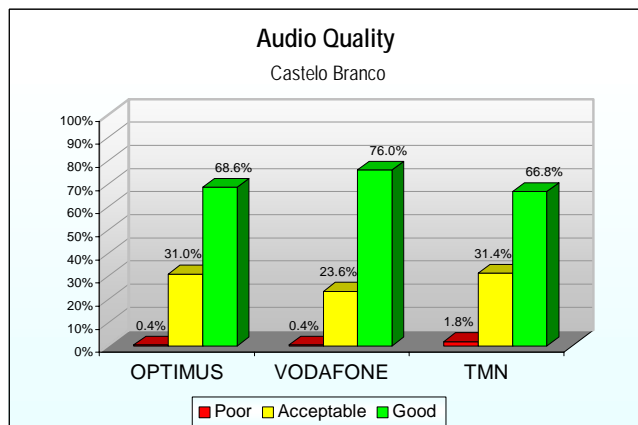
1.5.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	138 100%	138 100%	139 100%
Routed Calls	Total	137 99.3%	136 98.6%	137 98.6%	
	Abandoned During Conversation	0 0.0%	2 1.4%	0 0.0%	
	Normal Termination Calls	137 99.3%	134 97.1%	137 98.6%	
Non-Routed Calls		1 0.7%	2 1.4%	2 1.4%	
Dropped Calls	Total	1 0.7%	4 2.9%	2 1.4%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	1 0.7%	2 1.4%
		Radio Link Failure	0 0.0%	1 0.7%	0 0.0%
		Other	1 0.7%	2 1.4%	0 0.0%



1.5.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	274 100%	271 100%	274 100%
Audio Quality (MOS)	Poor	1 0.4%	1 0.4%	5 1.8%	
	Acceptable	85 31.0%	64 23.6%	86 31.4%	
	Good	188 68.6%	206 76.0%	183 66.8%	

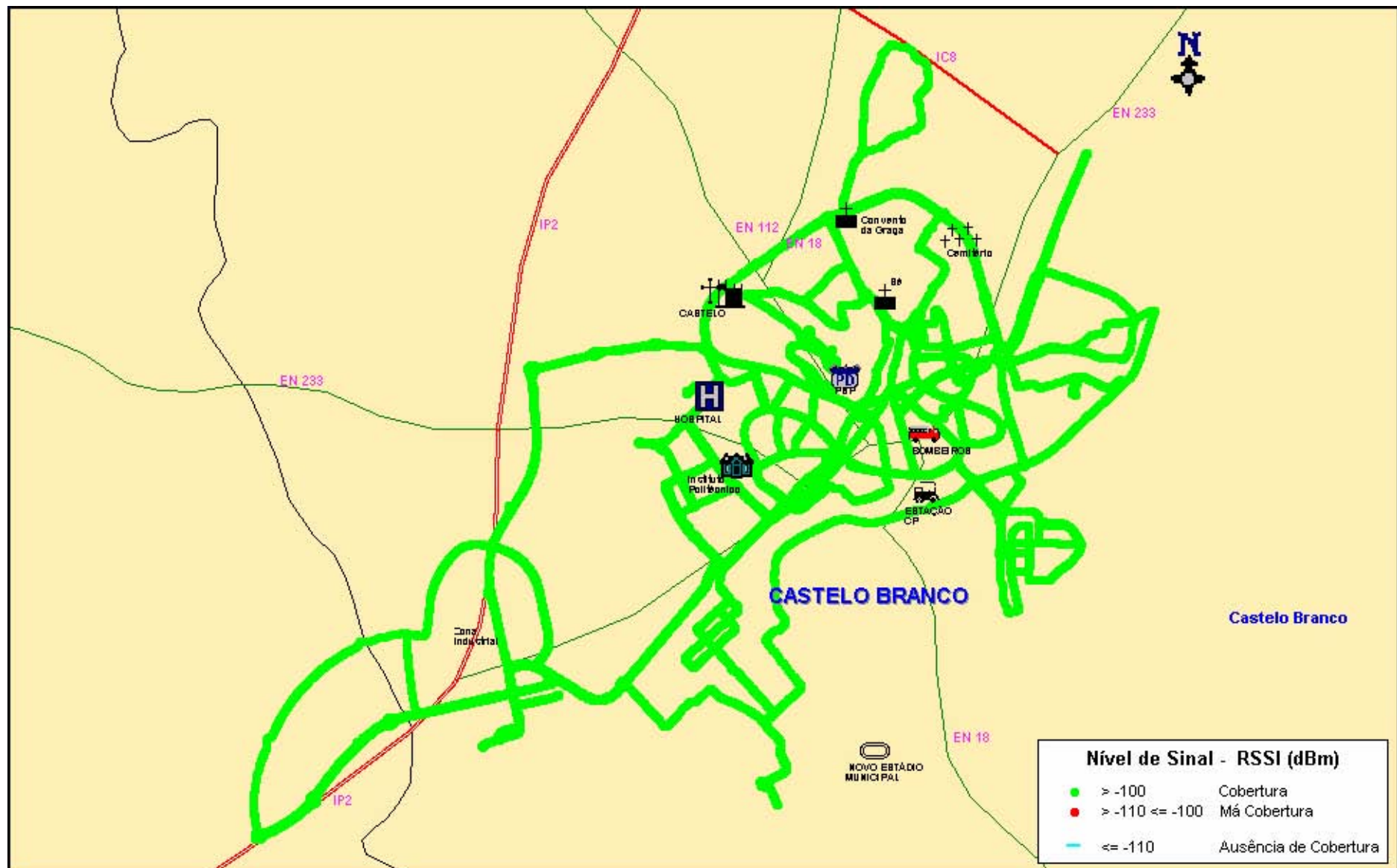


1.5.3 COVERAGE

(Following Pages)

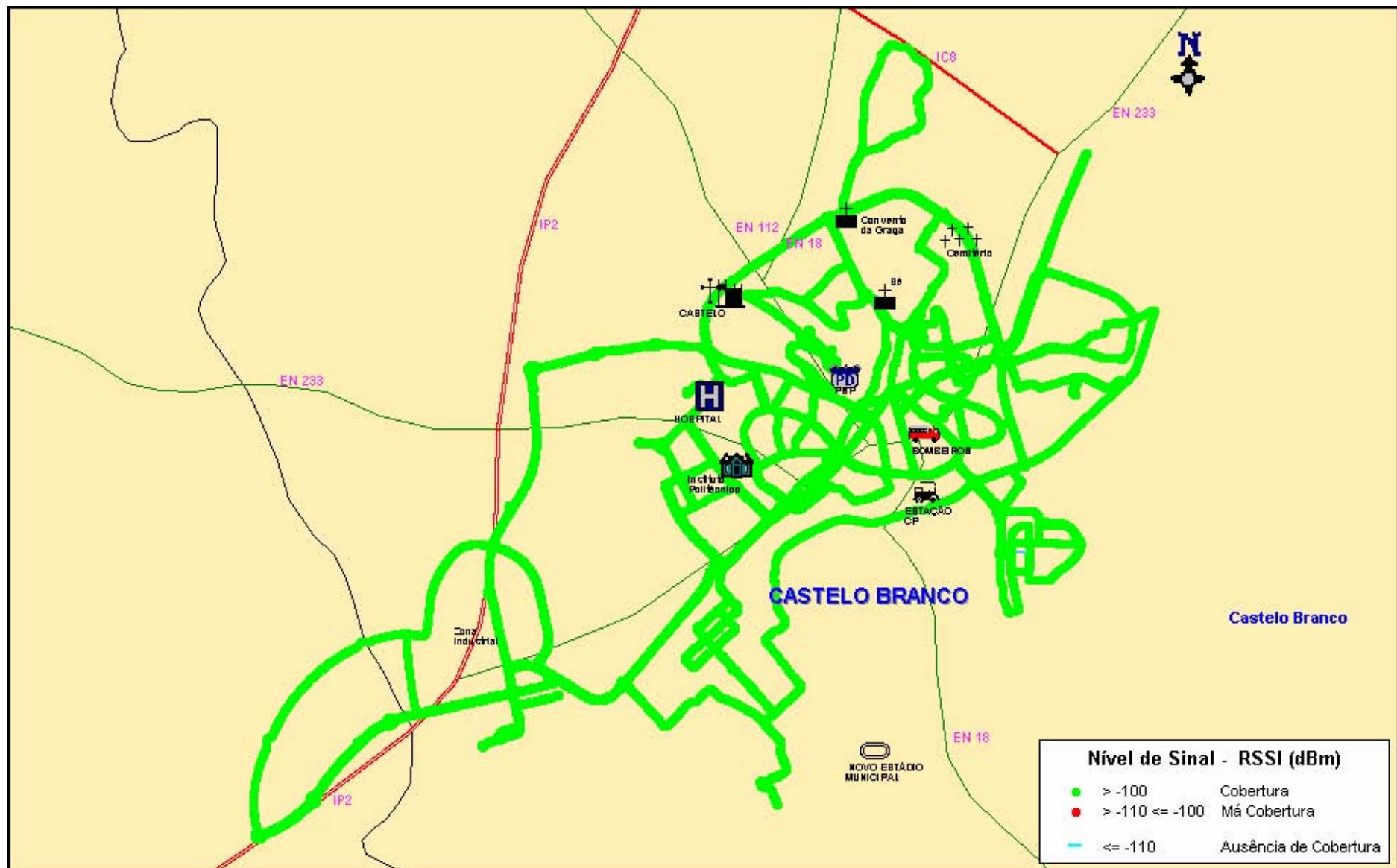
CASTELO BRANCO

OPTIMUS - PSTN



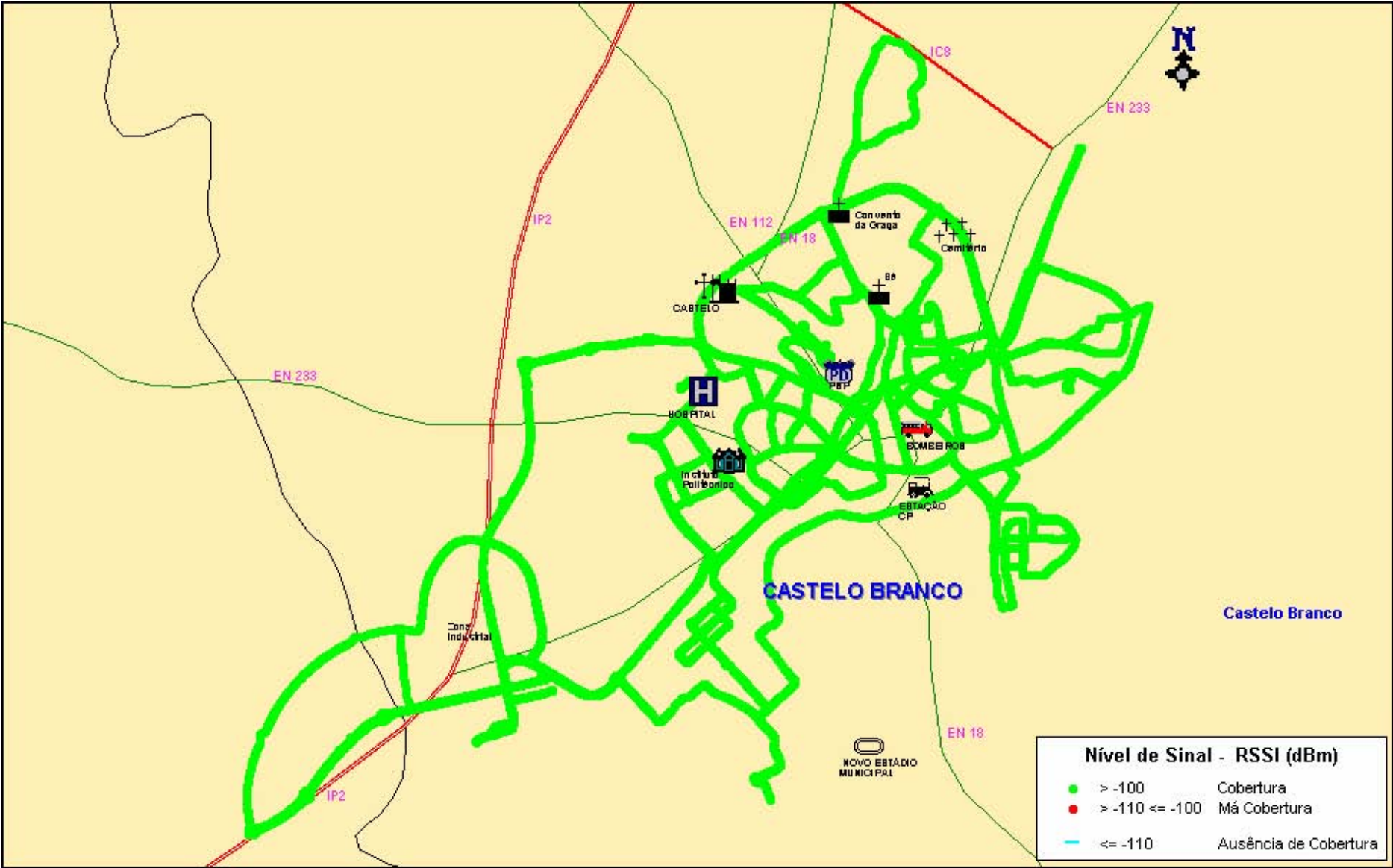
CASTELO BRANCO

VODAFONE - PSTN



CASTELO BRANCO

TMN - PSTN



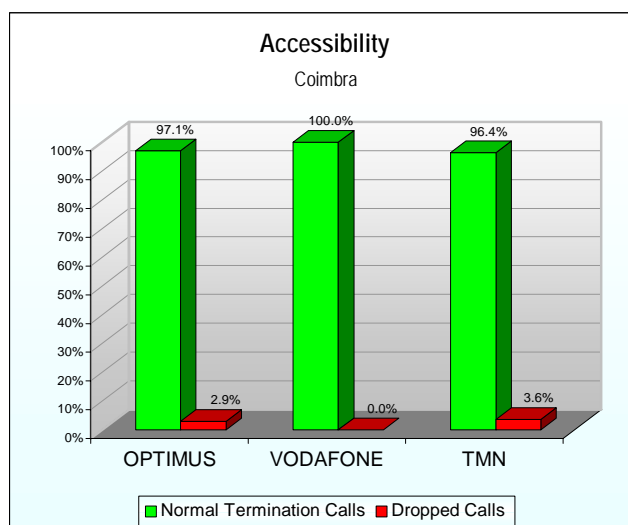
1.6 COIMBRA

Measurement Sessions on:

- 6 October 2005 between 9h45 and 12h50 and between 13h32 and 16h37

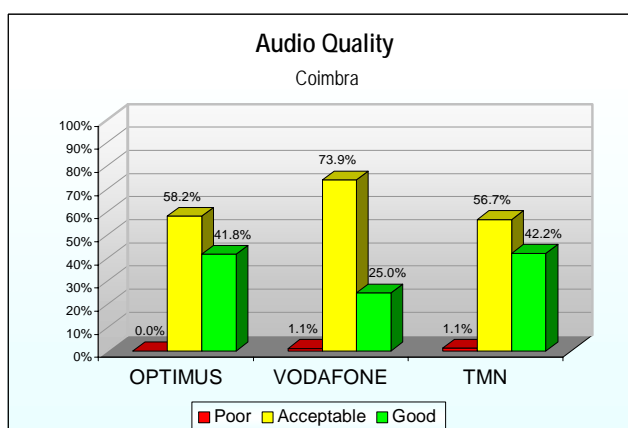
1.6.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	136 100%	136 100%	137 100%
Routed Calls	Total	133 97.8%	136 100.0%	134 97.8%	
	Abandoned During Conversation	1 0.7%	0 0.0%	2 1.5%	
	Normal Termination Calls	132 97.1%	136 100.0%	132 96.4%	
Non-Routed Calls			3 2.2%	0 0.0%	3 2.2%
Dropped Calls	Total	4 2.9%	0 0.0%	5 3.6%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	3 2.2%	0 0.0%	3 2.2%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	1 0.7%	0 0.0%	2 1.5%



1.6.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	263 100%	272 100%	268 100%
Audio Quality (MOS)	Poor	0 0.0%	3 1.1%	3 1.1%	
	Acceptable	153 58.2%	201 73.9%	152 56.7%	
	Good	110 41.8%	68 25.0%	113 42.2%	

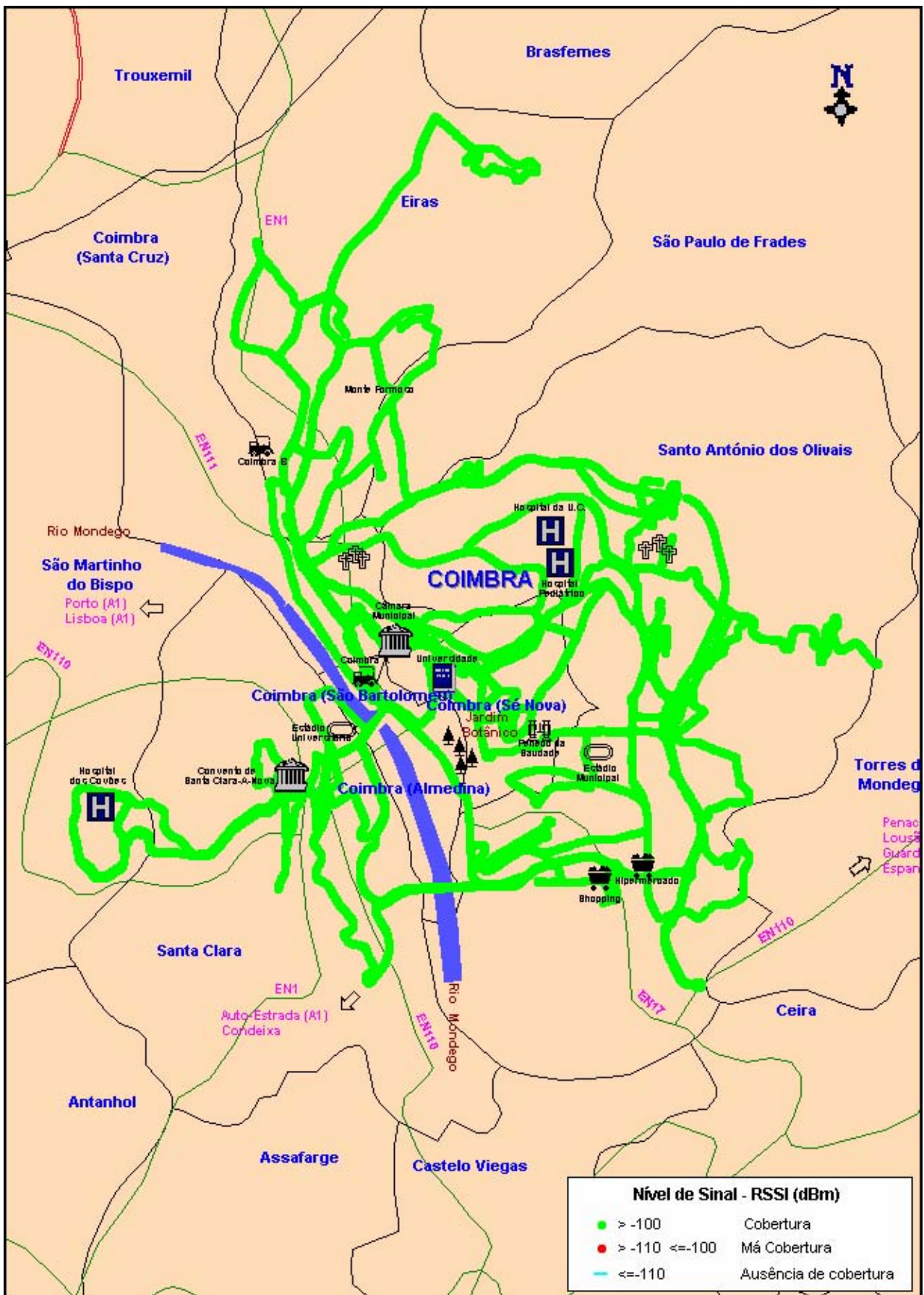


1.6.3 COVERAGE

(Following Pages)

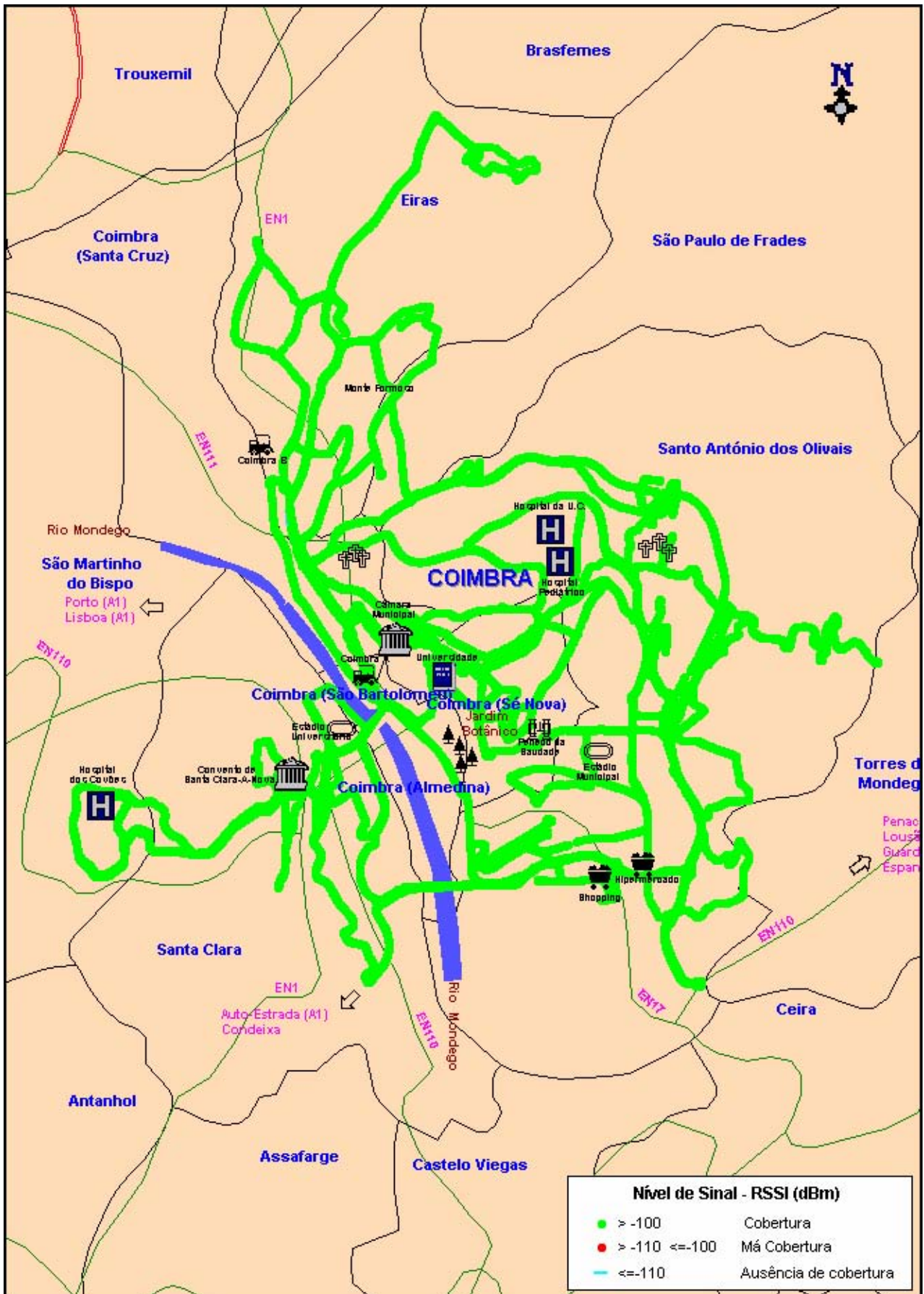
COIMBRA

OPTIMUS - PSTN



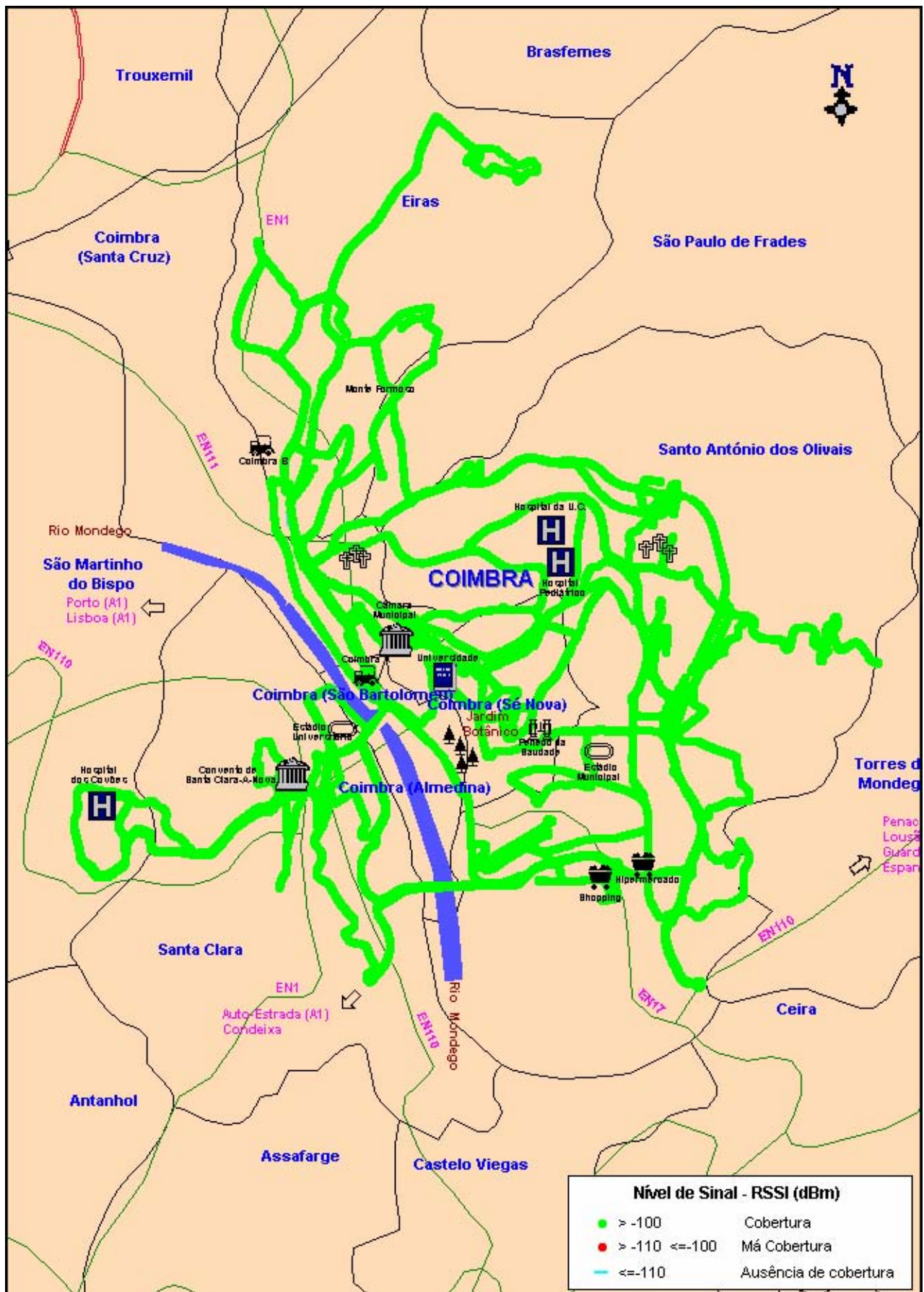
COIMBRA

VODAFONE - PSTN



COIMBRA

TMN - PSTN



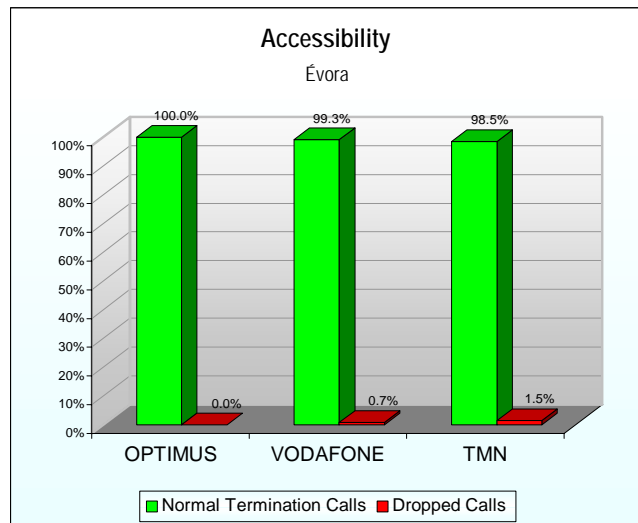
1.7 ÉVORA

Measurement Sessions on:

- 21 September 2005 between 9h40 and 12h45 and between 14h53 and 17h57

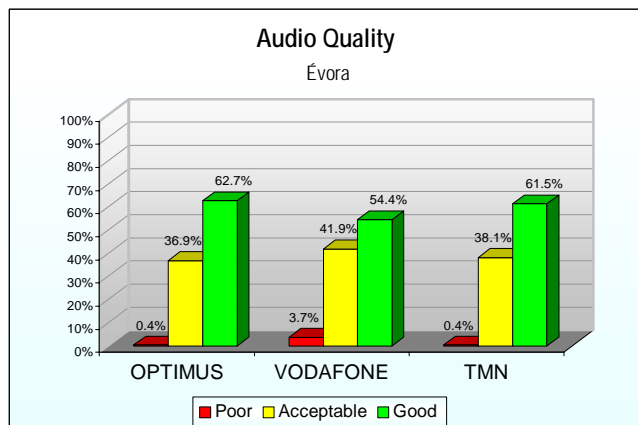
1.7.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	136 100%	136 100%	136 100%
Routed Calls	Total	136 100.0%	135 99.3%	135 99.3%	
	Abandoned During Conversation	0 0.0%	0 0.0%	1 0.7%	
	Normal Termination Calls	136 100.0%	135 99.3%	134 98.5%	
Non-Routed Calls		0 0.0%	1 0.7%	1 0.7%	
Dropped Calls	Total	0 0.0%	1 0.7%	2 1.5%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	1 0.7%	1 0.7%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	0 0.0%	0 0.0%	1 0.7%



1.7.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	271 100%	270 100%	270 100%
Audio Quality (MOS)	Poor	1 0.4%	10 3.7%	1 0.4%	
	Acceptable	100 36.9%	113 41.9%	103 38.1%	
	Good	170 62.7%	147 54.4%	166 61.5%	

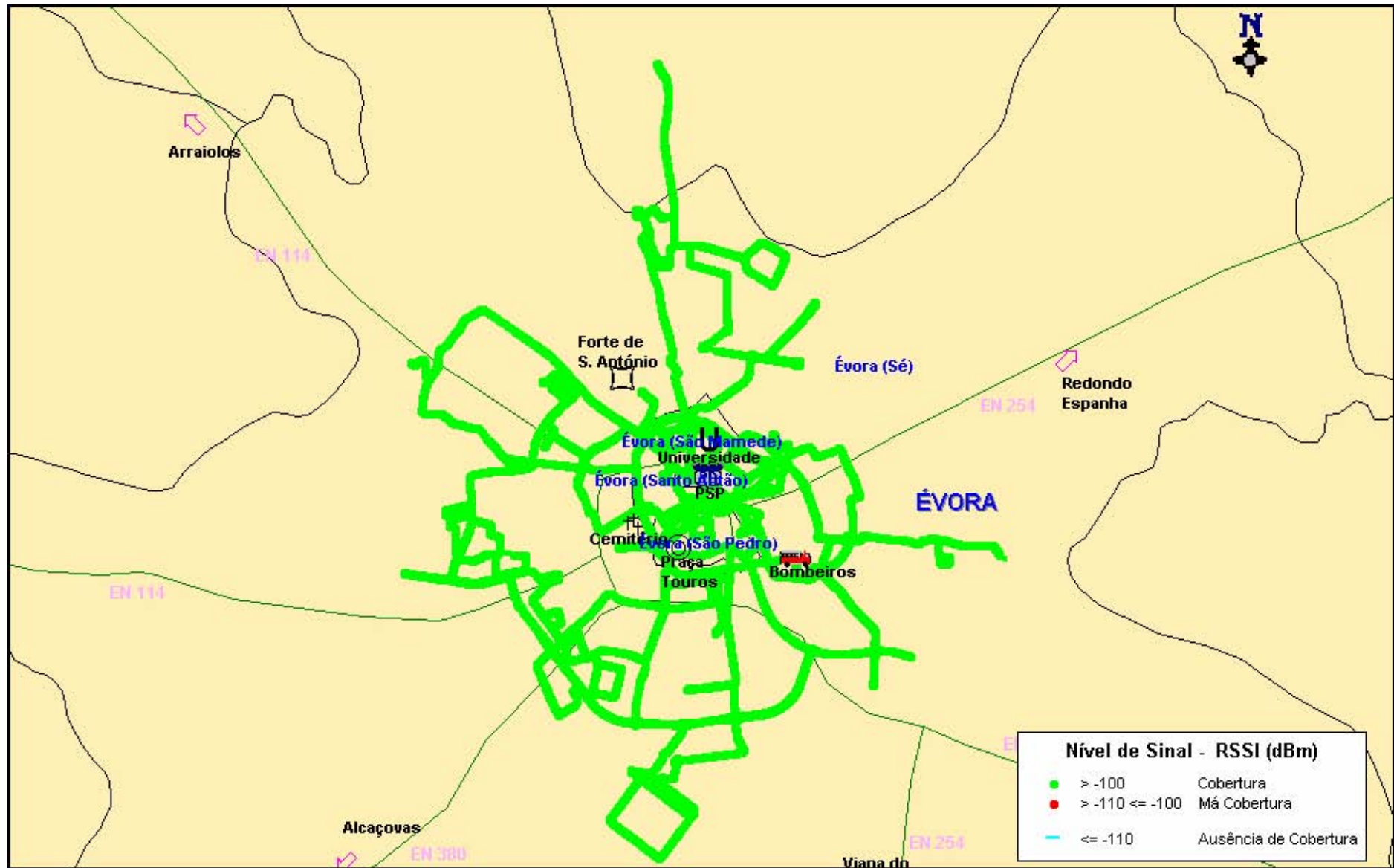


1.7.3 COVERAGE

(Following Pages)

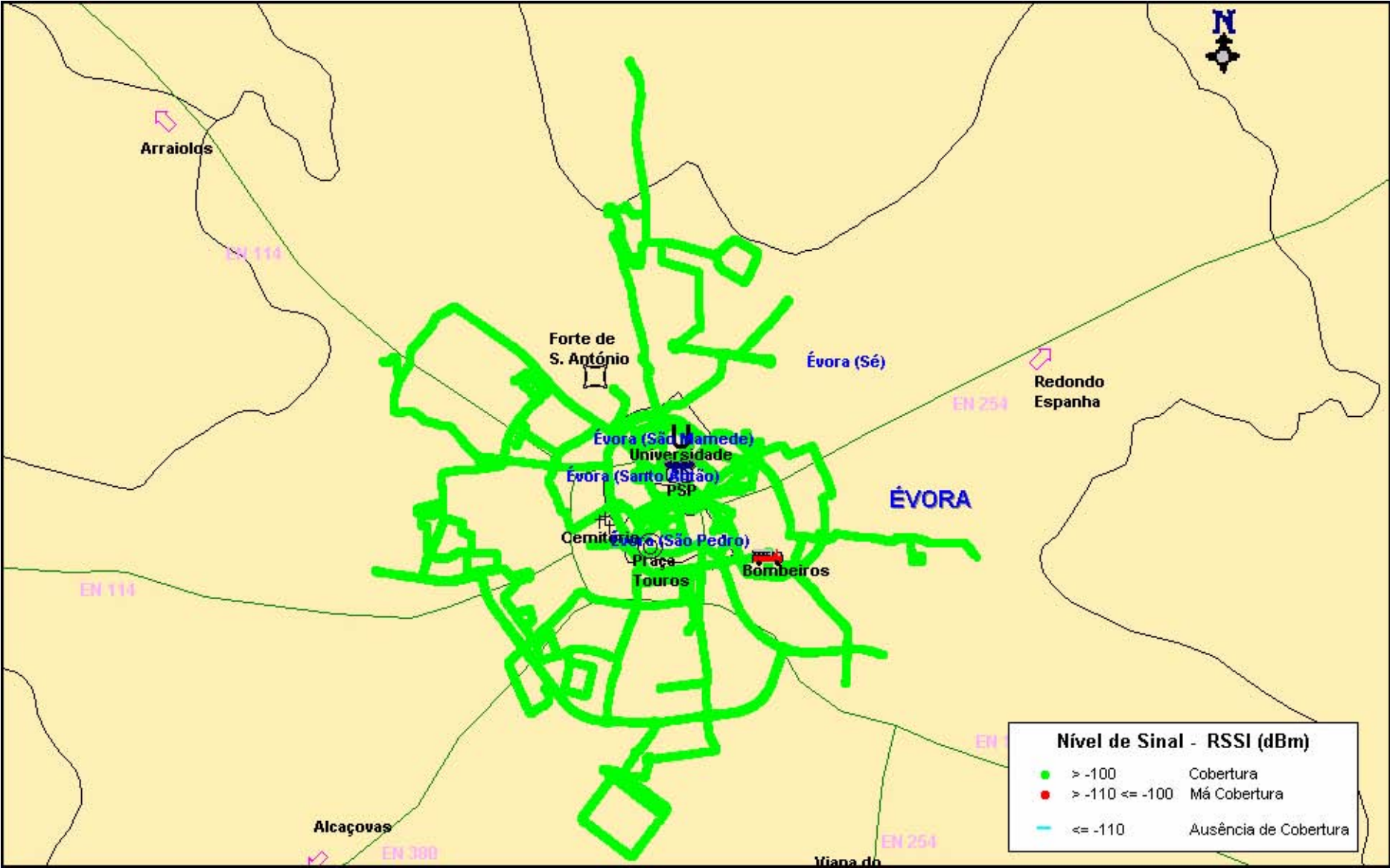
ÉVORA

OPTIMUS - PSTN



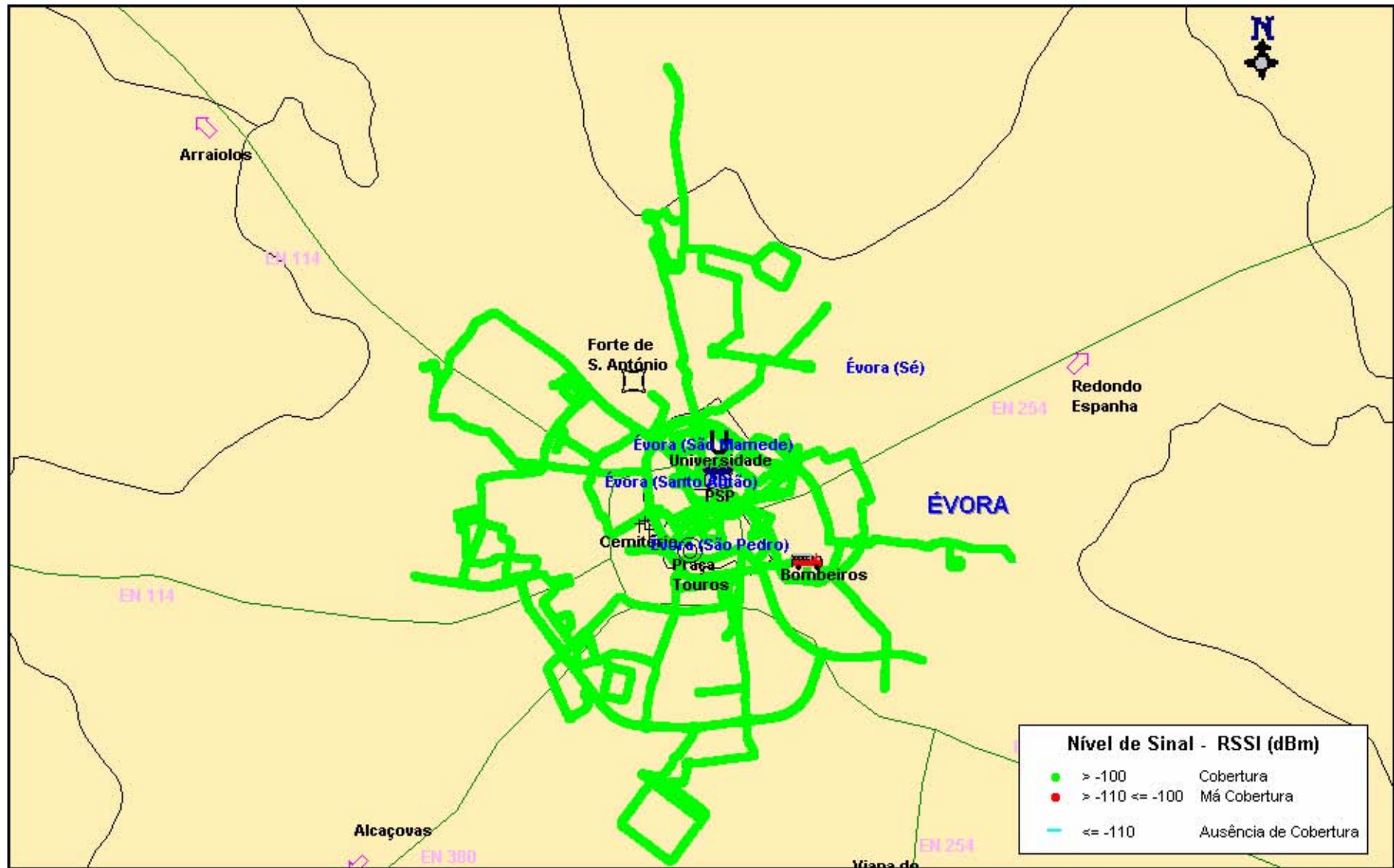
ÉVORA

VODAFONE - PSTN



ÉVORA

TMN - PSTN



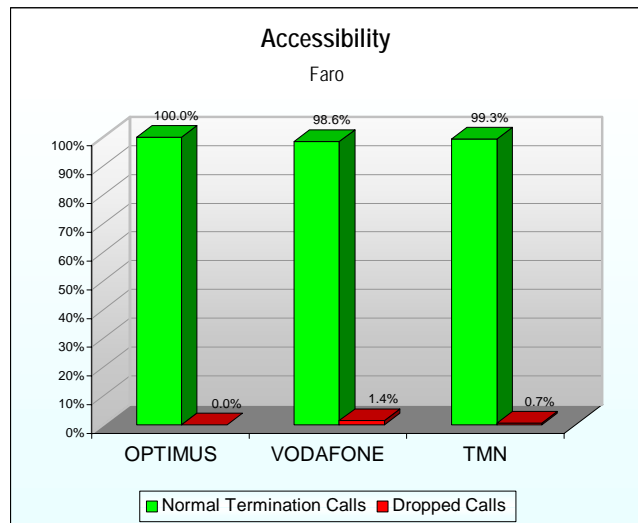
1.8 FARO

Measurement Sessions on:

- 18 October 2005 between 9h45 and 12h53 and between 15h02 and 18h22

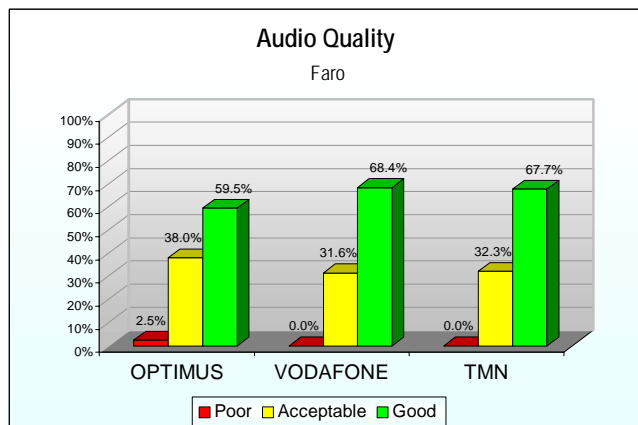
1.8.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	142	143	144
			100%	100%	100%
Routed Calls	Total	142	142	144	
	Abandoned During Conversation	0	1	1	
	Normal Termination Calls	142	141	143	
			100.0%	99.3%	100.0%
Non-Routed Calls		0	1	0	
			0.0%	0.7%	0.0%
Dropped Calls	Total	0	2	1	
	Call Ending Causes	No Service	0	0	0
		Congestion	0	1	1
		Radio Link Failure	0	0	0
		Other	0	1	0
			0.0%	0.7%	0.0%



1.8.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	284	282	288
			100%	100%	100%
Audio Quality (MOS)	Poor	7	0	0	
	Acceptable	108	89	93	
	Good	169	193	195	
			2.5%	0.0%	0.0%
			38.0%	31.6%	32.3%
			59.5%	68.4%	67.7%

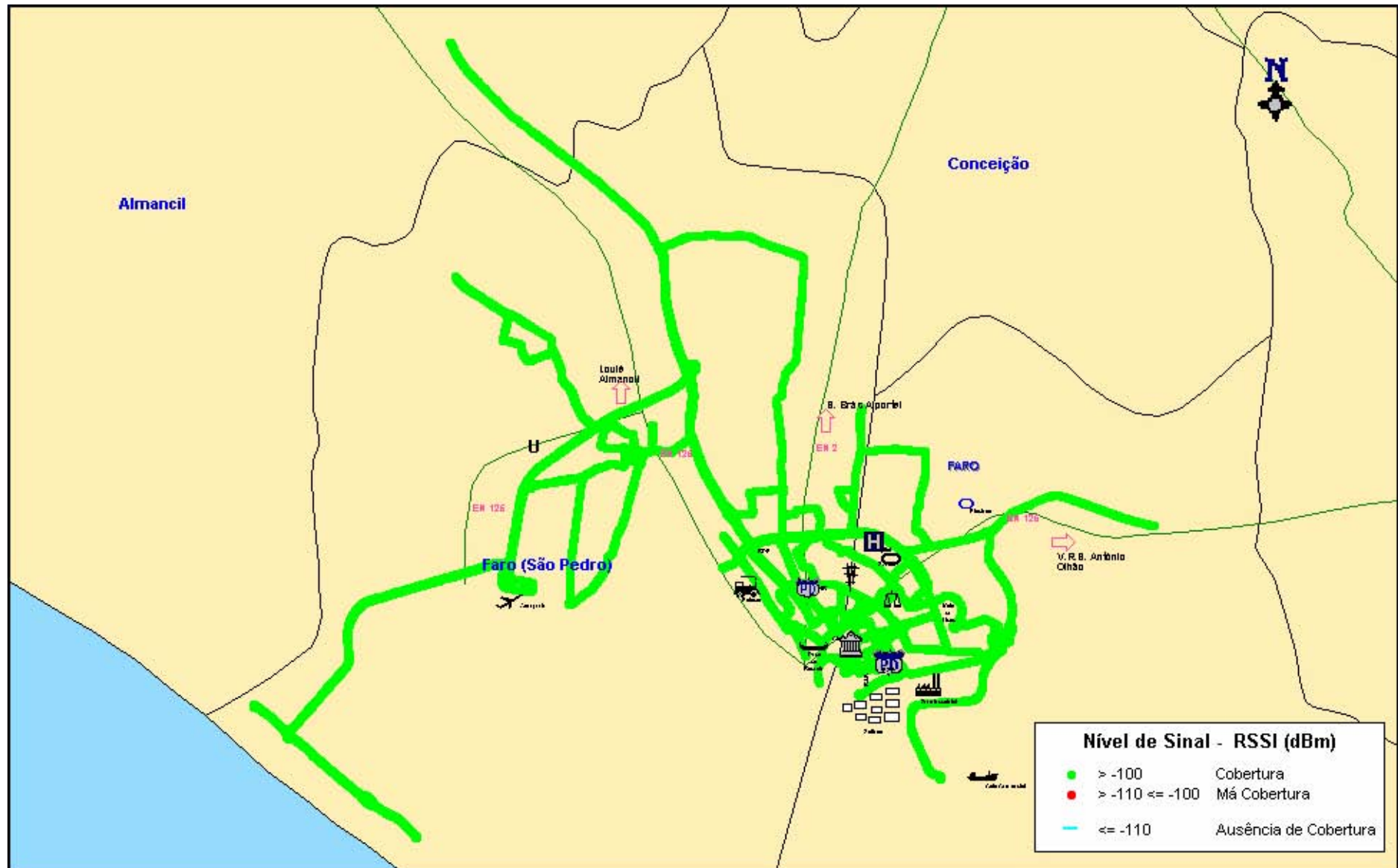


1.8.3 COVERAGE

(Following Pages)

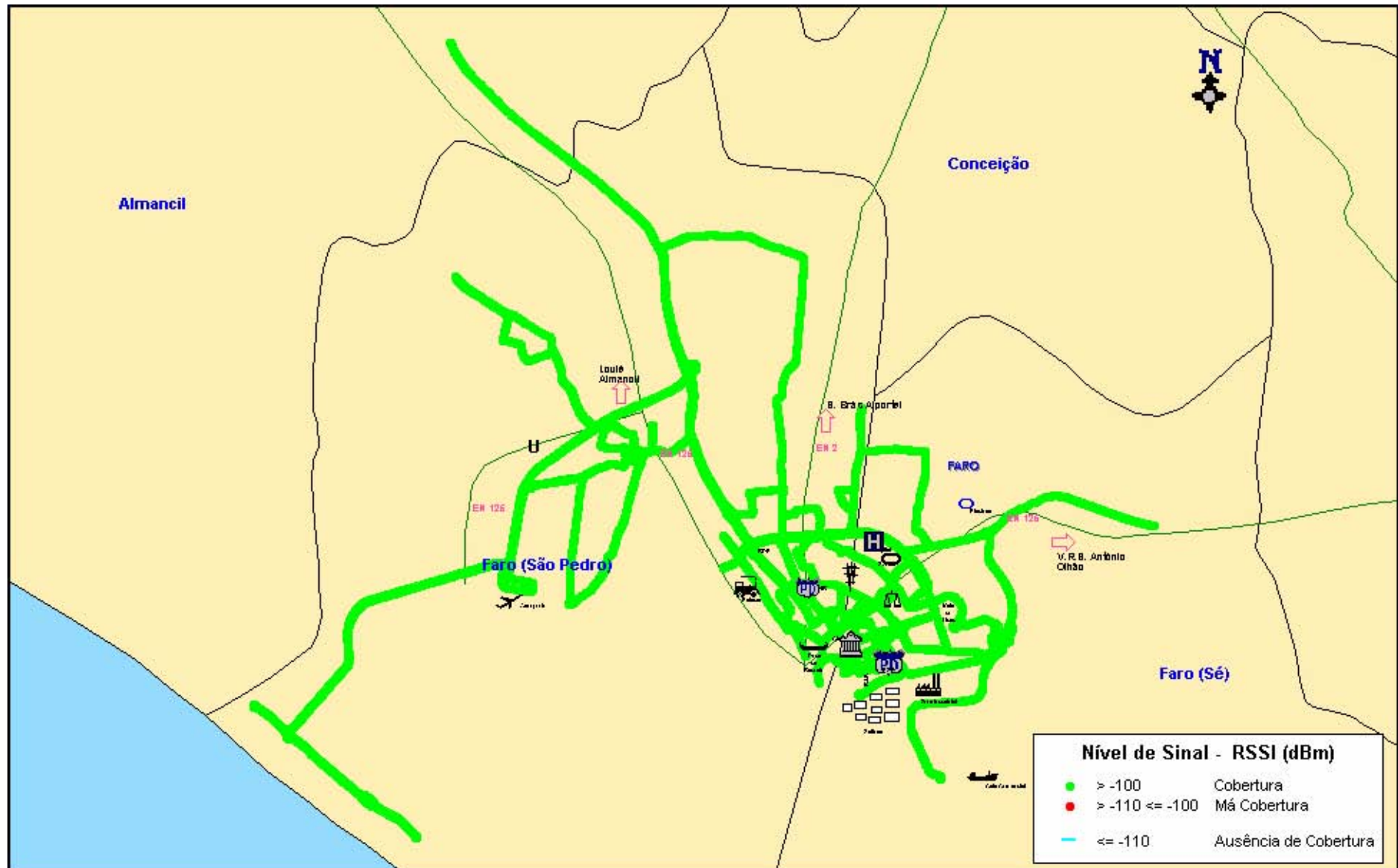
FARO

OPTIMUS - PSTN



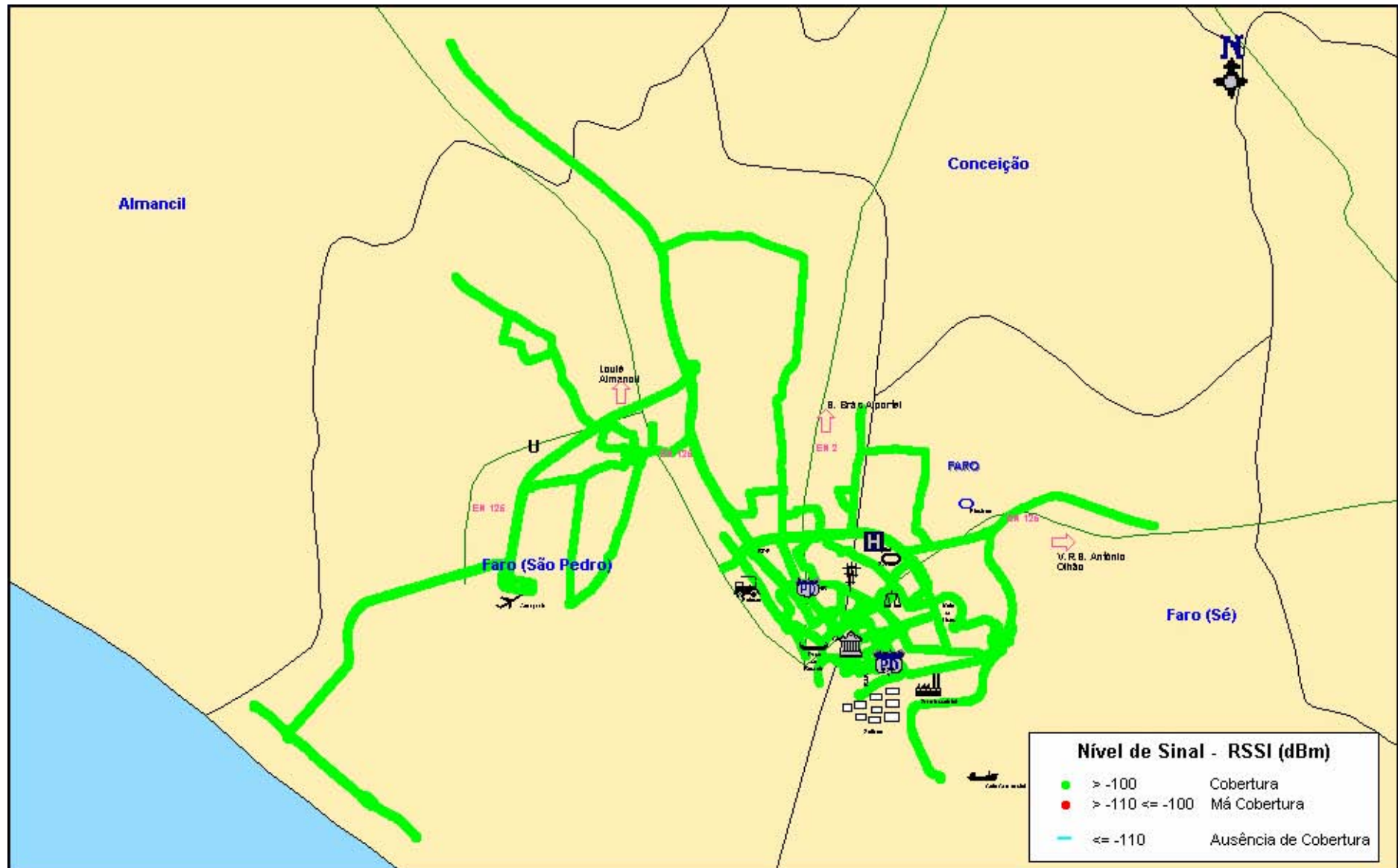
FARO

VODAFONE - PSTN



FARO

TMN - PSTN



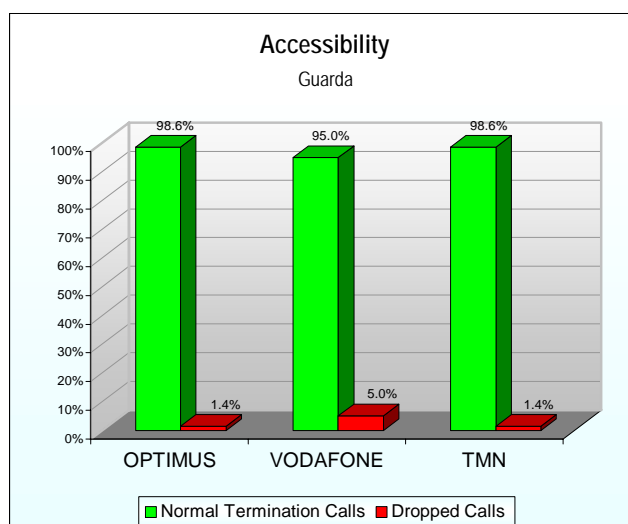
1.9 GUARDA

Measurement Sessions on:

- 27 September 2005 between 14h08 and 17h14
- 28 September 2005 between 9h23 and 12h32

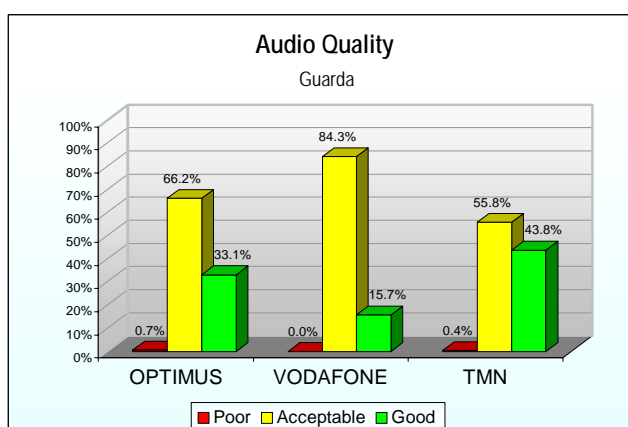
1.9.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	139	139	138
			100%	100%	100%
Routed Calls	Total	139	136	138	
	Abandoned During Conversation	2	4	2	
	Normal Termination Calls	137	132	136	
			98.6%	95.0%	98.6%
Non-Routed Calls		0	3	0	
			0.0%	2.2%	0.0%
Dropped Calls	Total	2	7	2	
	Call Ending Causes	No Service	0	0	0
		Congestion	0	4	0
		Radio Link Failure	0	0	1
		Other	2	3	1
			1.4%	2.2%	0.7%



1.9.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	278	267	274
			100%	100%	100%
Audio Quality (MOS)	Poor	2	0	1	
	Acceptable	184	225	153	
	Good	92	42	120	
			0.7%	0.0%	0.4%
			66.2%	84.3%	55.8%
			33.1%	15.7%	43.8%

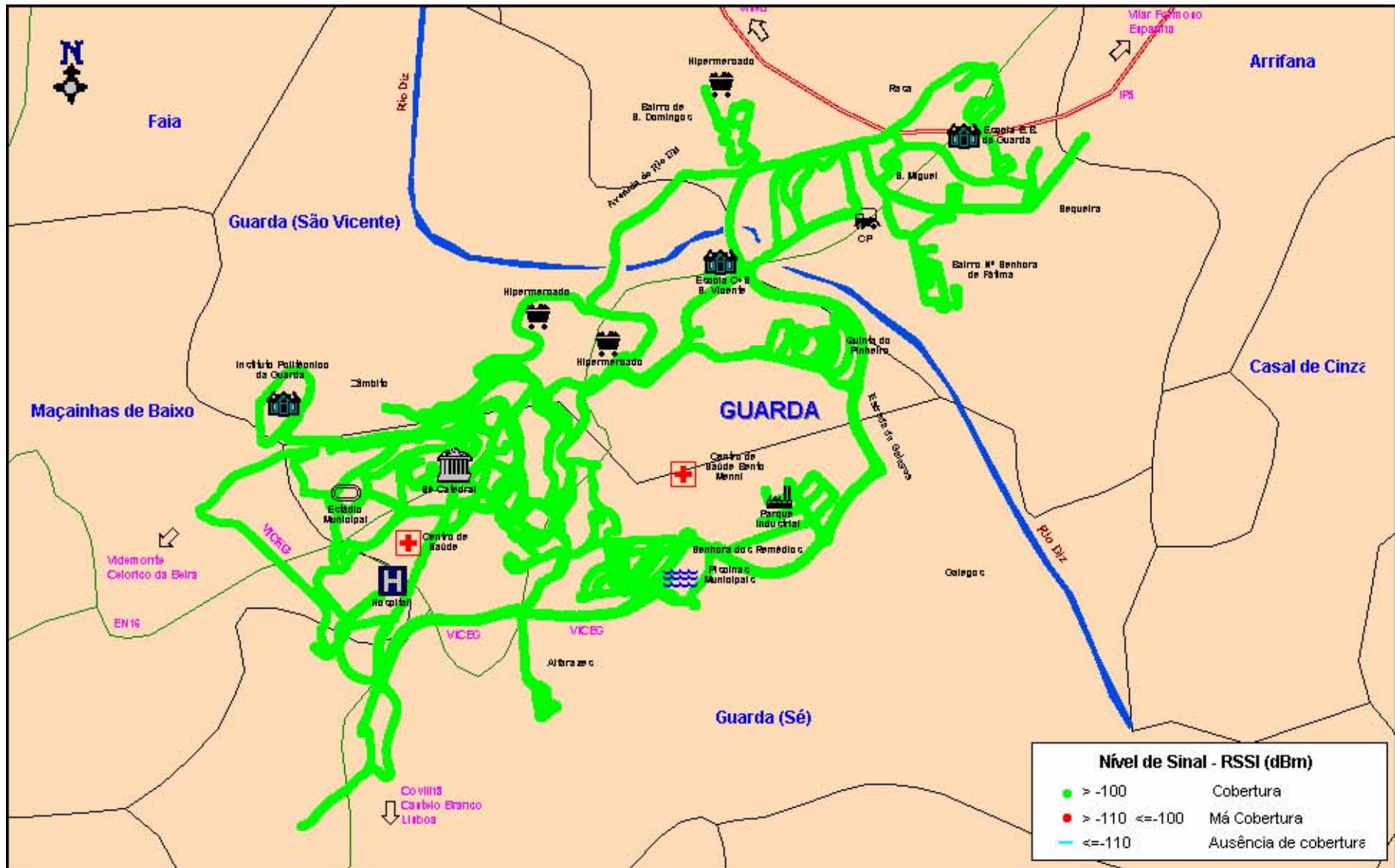


1.9.3 COVERAGE

(Following Pages)

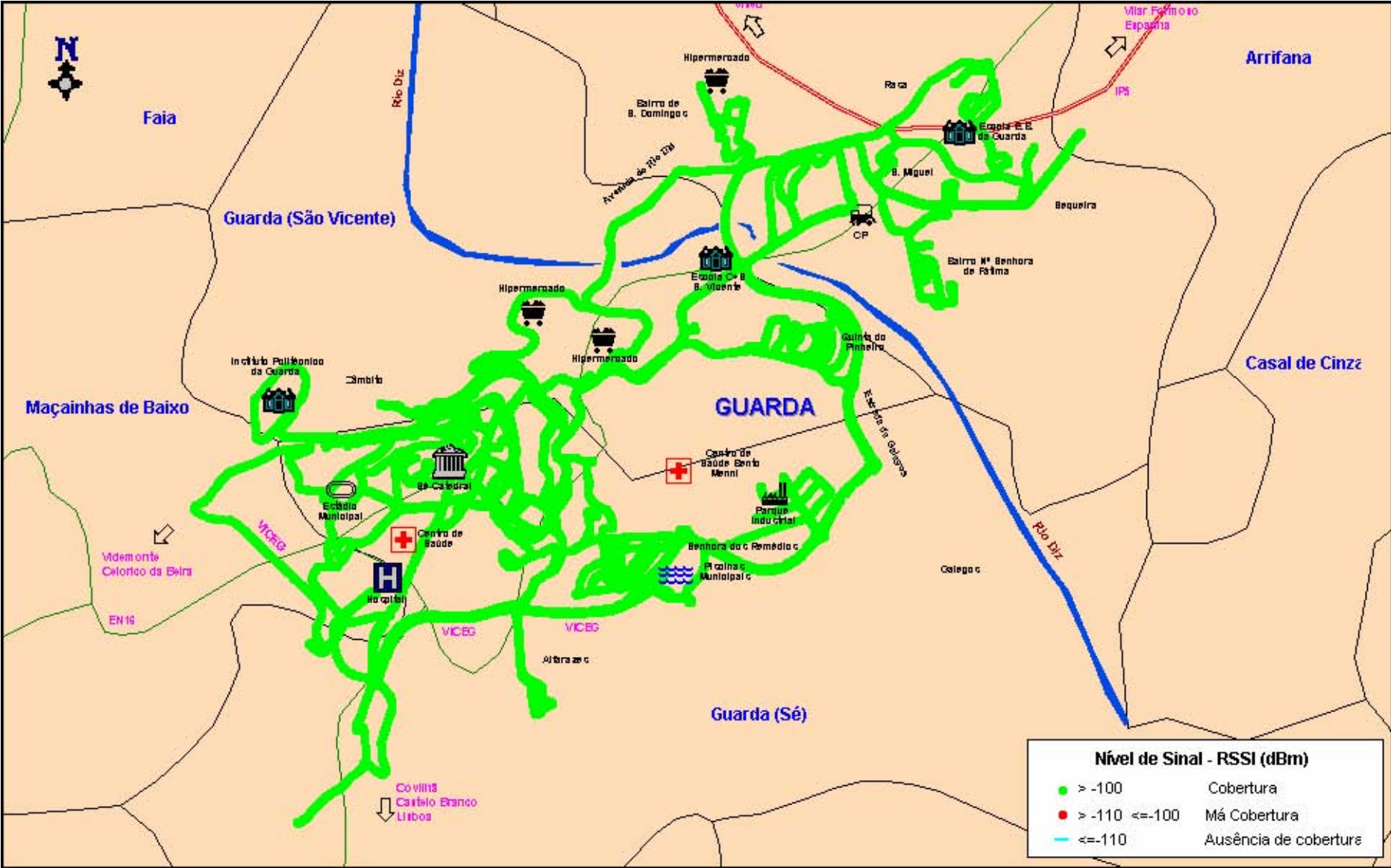
GUARDA

OPTIMUS - PSTN



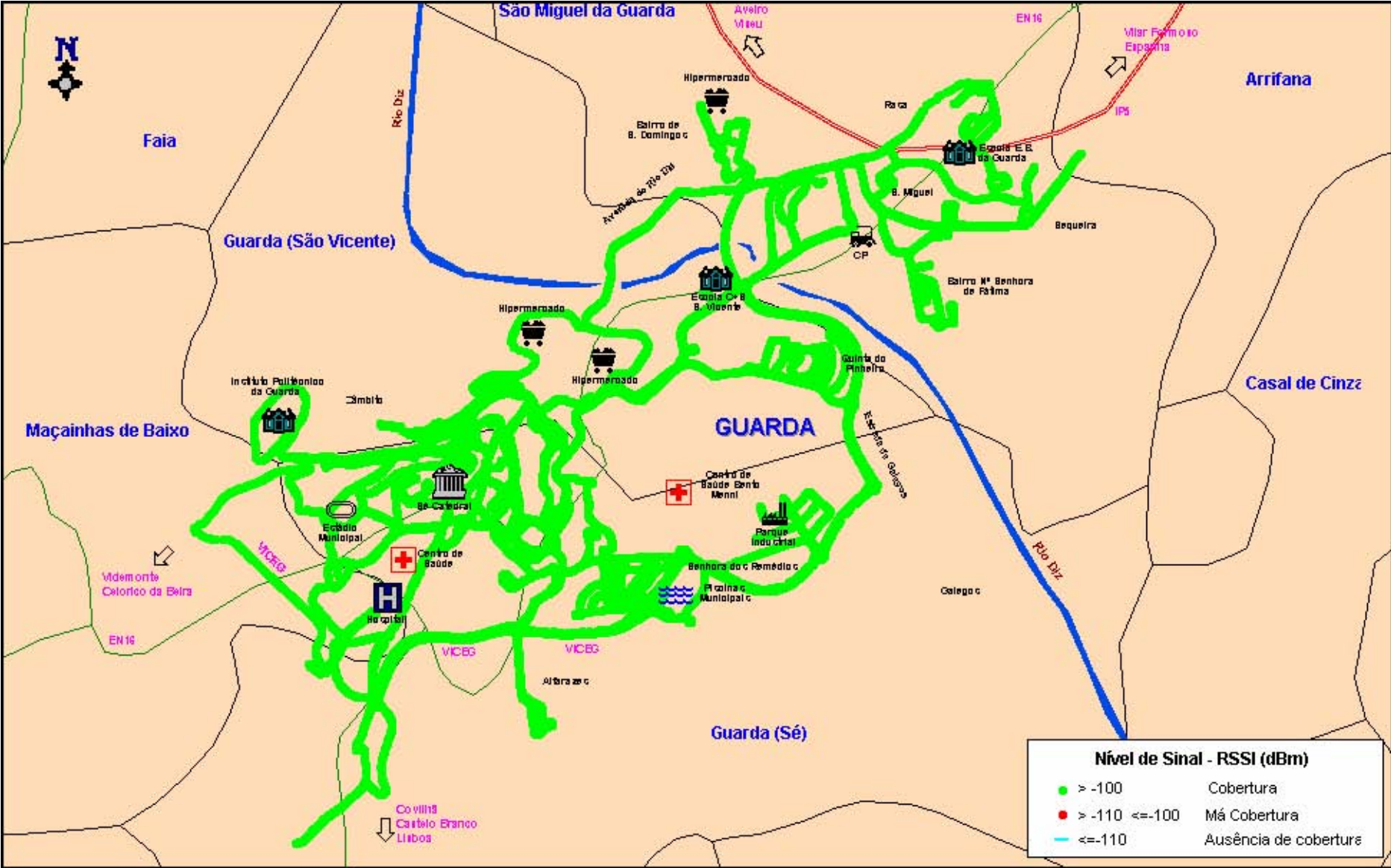
GUARDA

VODAFONE - PSTN



GUARDA

TMN - PSTN



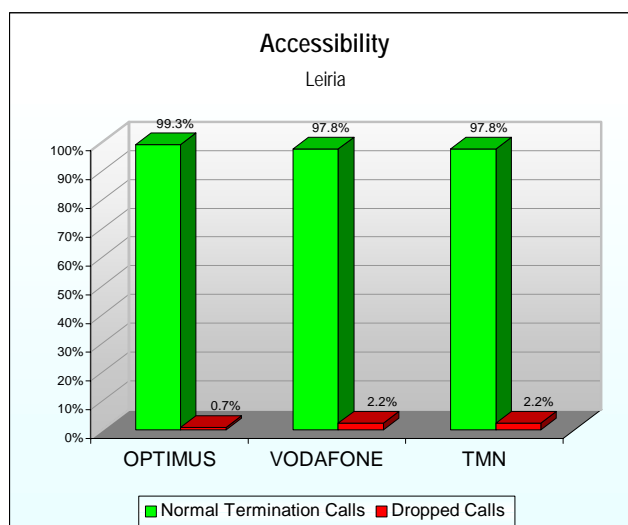
1.10 LEIRIA

Measurement Sessions on:

- 28 September 2005 between 9h24 and 12h27 and between 13h36 and 16h37

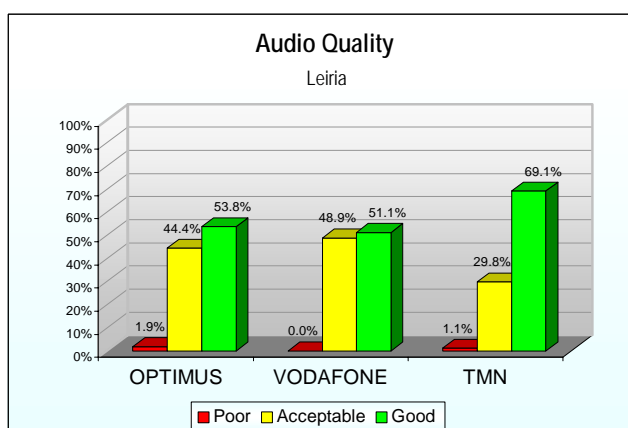
1.10.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	134 100%	135 100%	134 100%
Routed Calls	Total	133 99.3%	133 98.5%	133 99.3%	
	Abandoned During Conversation	0 0.0%	1 0.7%	2 1.5%	
	Normal Termination Calls	133 99.3%	132 97.8%	131 97.8%	
Non-Routed Calls		1 0.7%	2 1.5%	1 0.7%	
Dropped Calls	Total	1 0.7%	3 2.2%	3 2.2%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	2 1.5%	1 0.7%
		Radio Link Failure	0 0.0%	0 0.0%	1 0.7%
		Other	1 0.7%	1 0.7%	1 0.7%



1.10.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	266 100%	264 100%	265 100%
Audio Quality (MOS)	Poor	5 1.9%	0 0.0%	3 1.1%	
	Acceptable	118 44.4%	129 48.9%	79 29.8%	
	Good	143 53.8%	135 51.1%	183 69.1%	

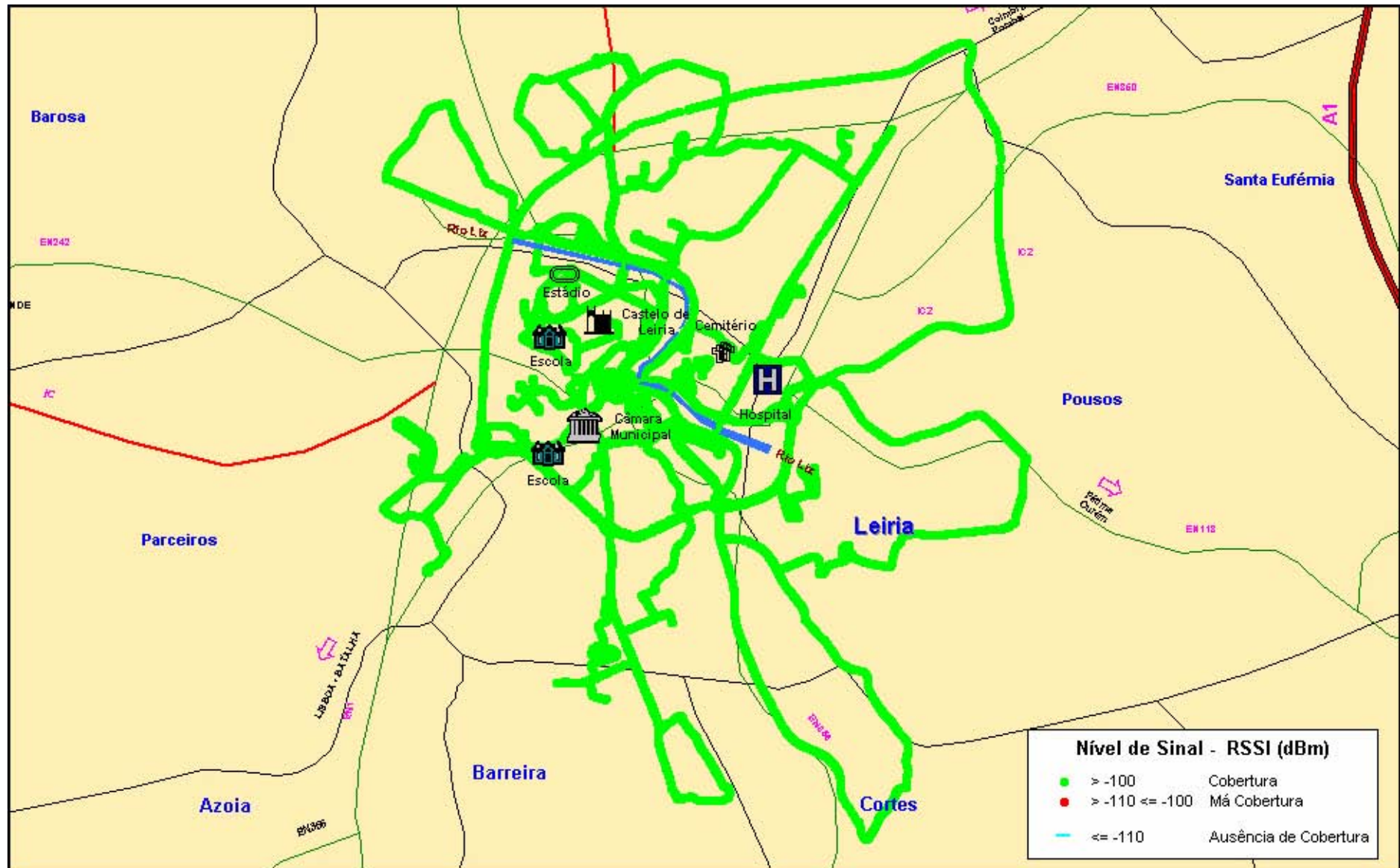


1.10.3 COVERAGE

(Following Pages)

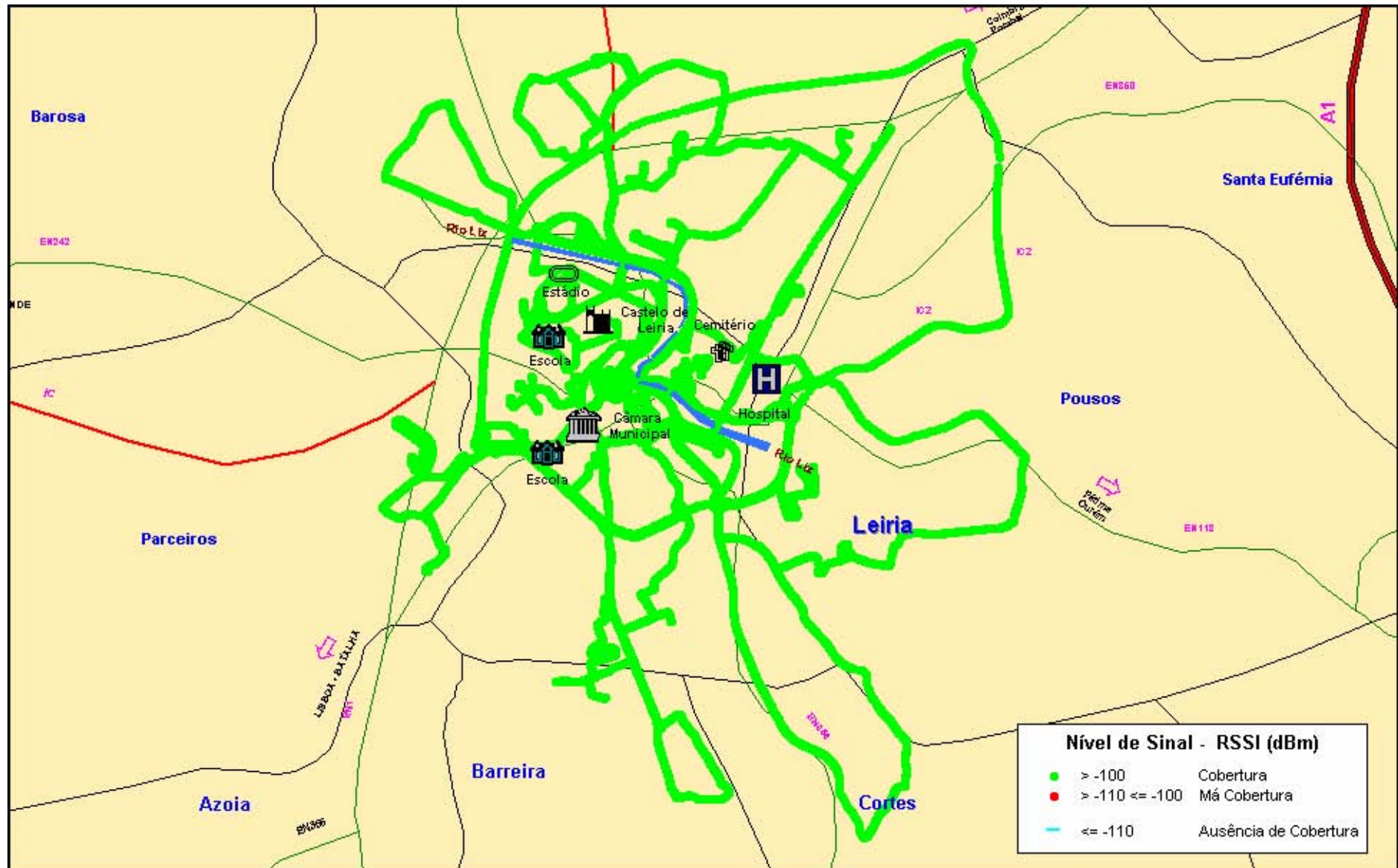
LEIRIA

OPTIMUS - PSTN



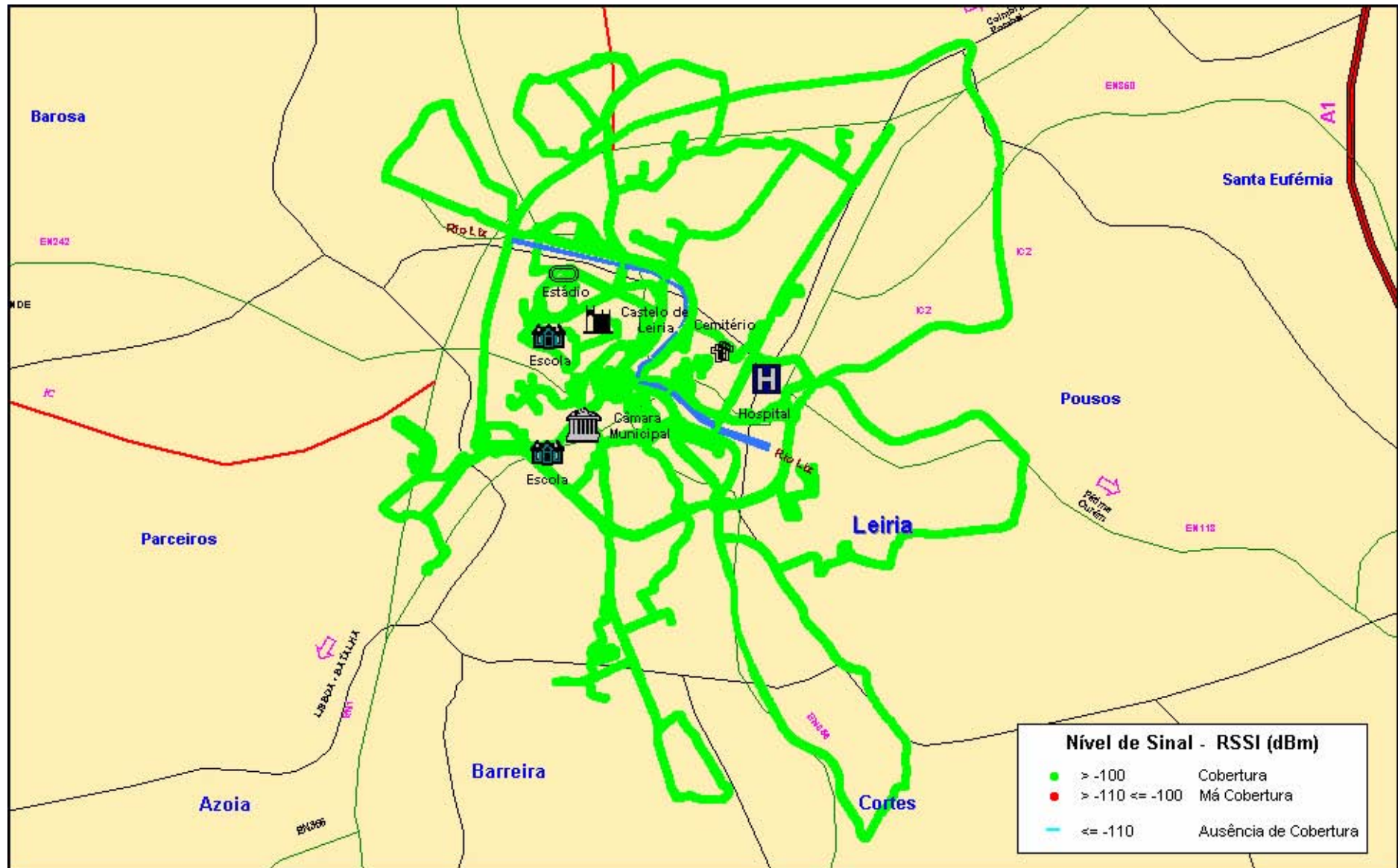
LEIRIA

VODAFONE - PSTN



LEIRIA

TMN - PSTN



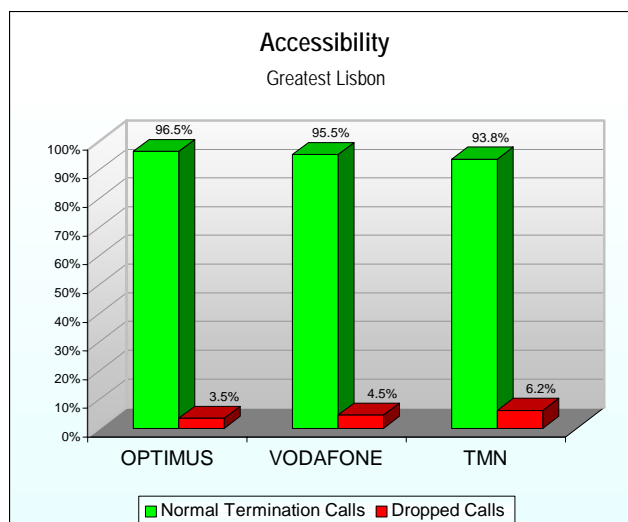
1.11 LISBON, ALMADA, AMADORA, CASCAIS, LOURES, ODIVELAS, OEIRAS, SINTRA, SEIXAL

Measurement Sessions on:

- 3 October 2005 between 8h02 and 11h39 and between 16h45 and 20h16
- 4 October 2005 between 7h58 and 11h41 and between 16h31 and 20h05
- 6 October 2005 between 7h53 and 11h28 and between 16h34 and 20h41
- 7 October 2005 between 7h58 and 11h32 and between 16h30 and 20h32
- 10 October 2005 between 8h23 and 11h57 and between 16h33 and 20h05

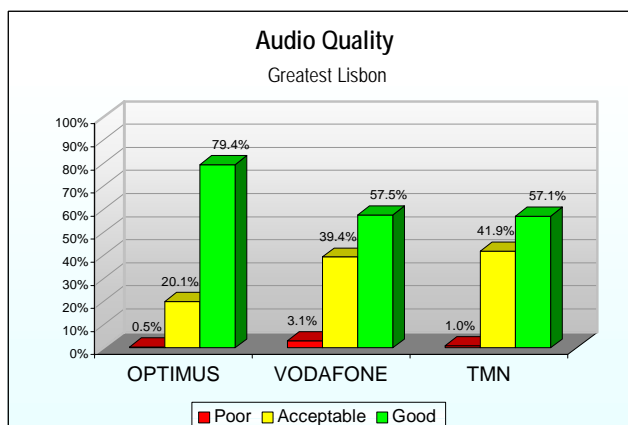
1.11.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN	
Total			817 100%	814 100%	817 100%	
Routed Calls	Total		796 97.4%	789 96.9%	795 97.3%	
	Abandoned During Conversation		8 1.0%	12 1.5%	29 3.5%	
	Normal Termination Calls		788 96.5%	777 95.5%	766 93.8%	
Non-Routed Calls			21 2.6%	25 3.1%	22 2.7%	
Dropped Calls	Total		29 3.5%	37 4.5%	51 6.2%	
	Call Ending Causes	No Service		0 0.0%	0 0.0%	0 0.0%
		Congestion		19 2.3%	24 2.9%	20 2.4%
		Radio Link Failure		5 0.6%	6 0.7%	6 0.7%
		Other		5 0.6%	7 0.9%	25 3.1%



1.11.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
Total			1,590 100%	1,574 100%	1,571 100%
Audio Quality (MOS)	Poor		8 0.5%	49 3.1%	16 1.0%
	Acceptable		319 20.1%	620 39.4%	658 41.9%
	Good		1,263 79.4%	905 57.5%	897 57.1%

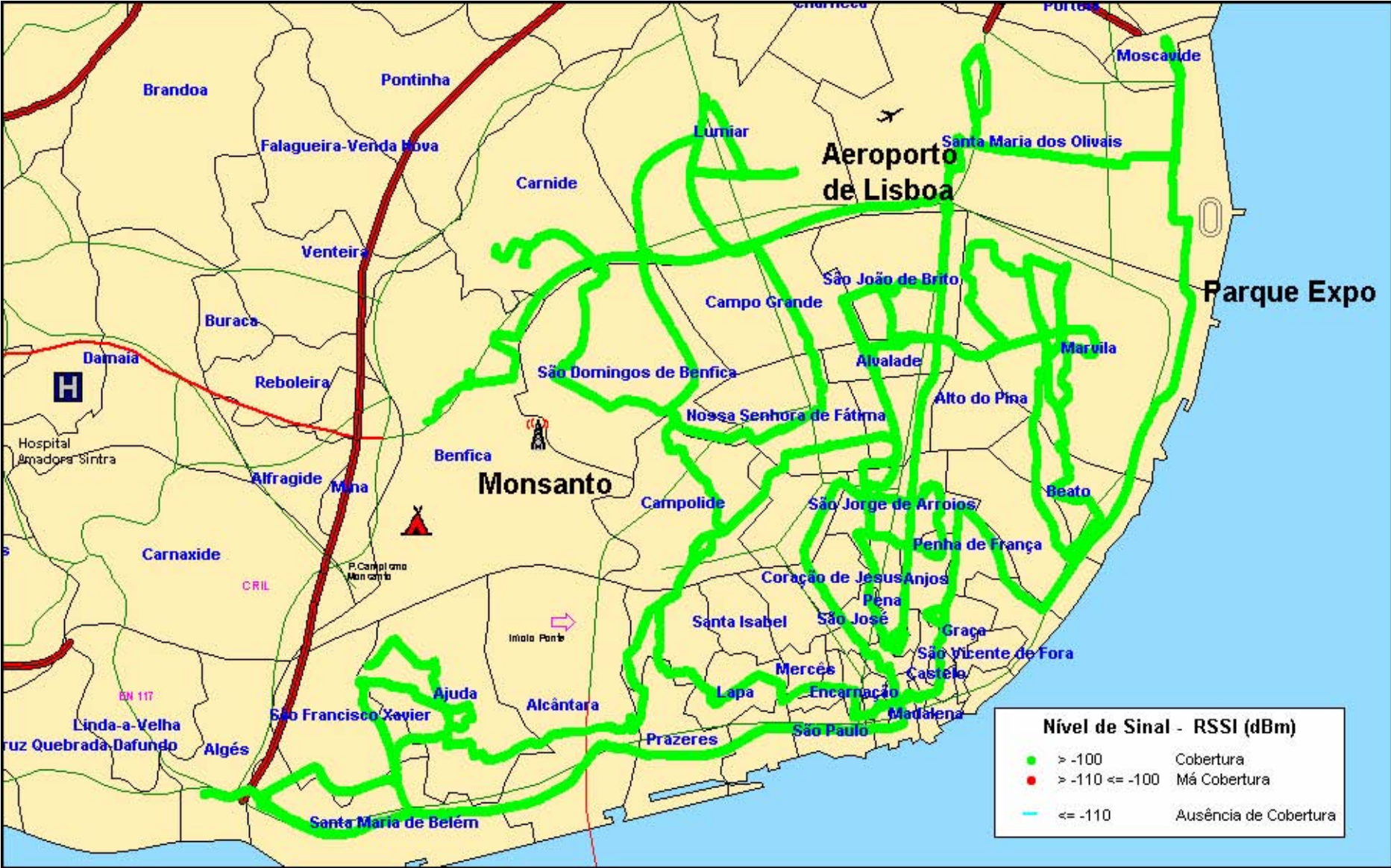


1.11.3 COVERAGE

(Following Pages)

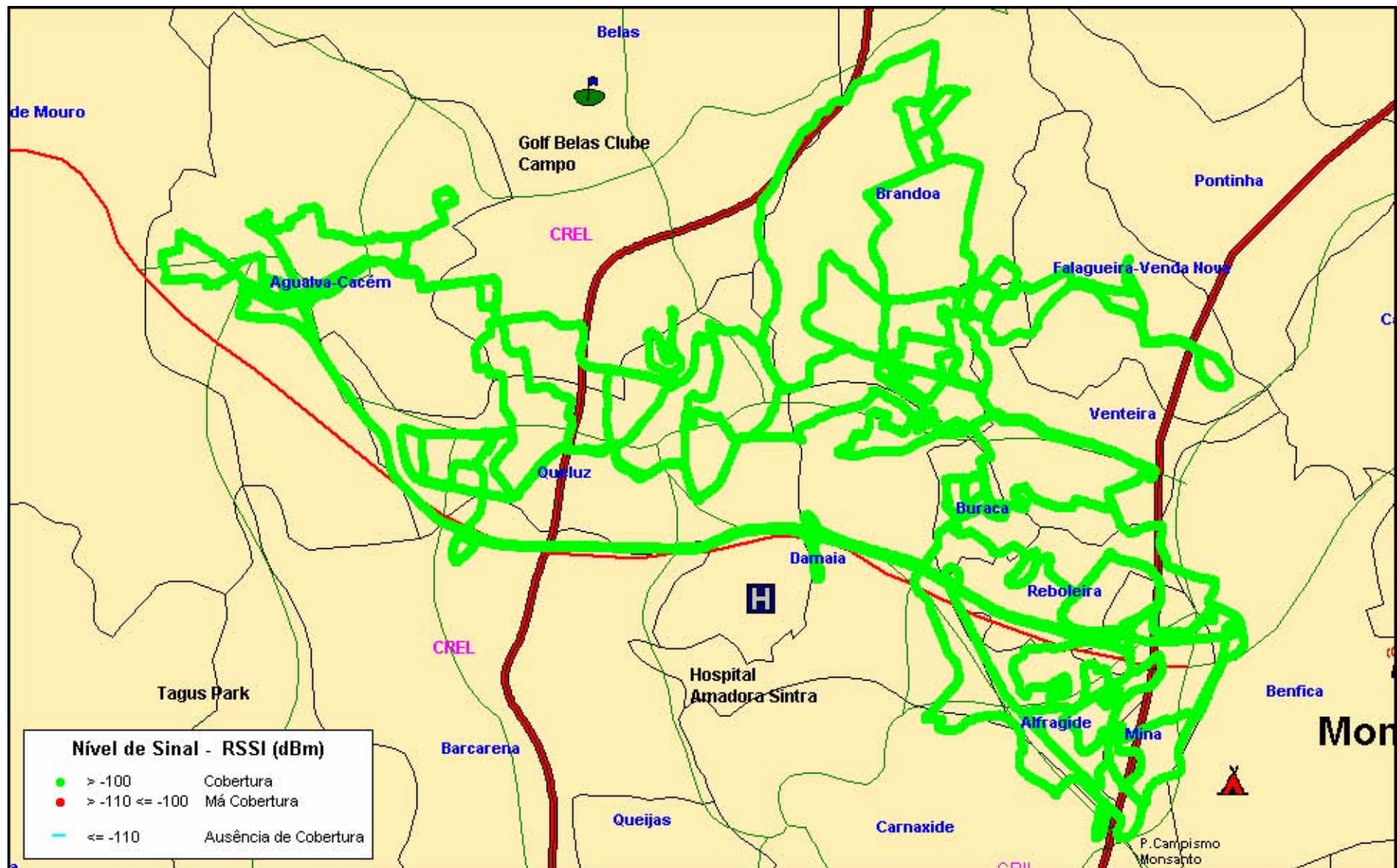
LISBON

OPTIMUS - PSTN



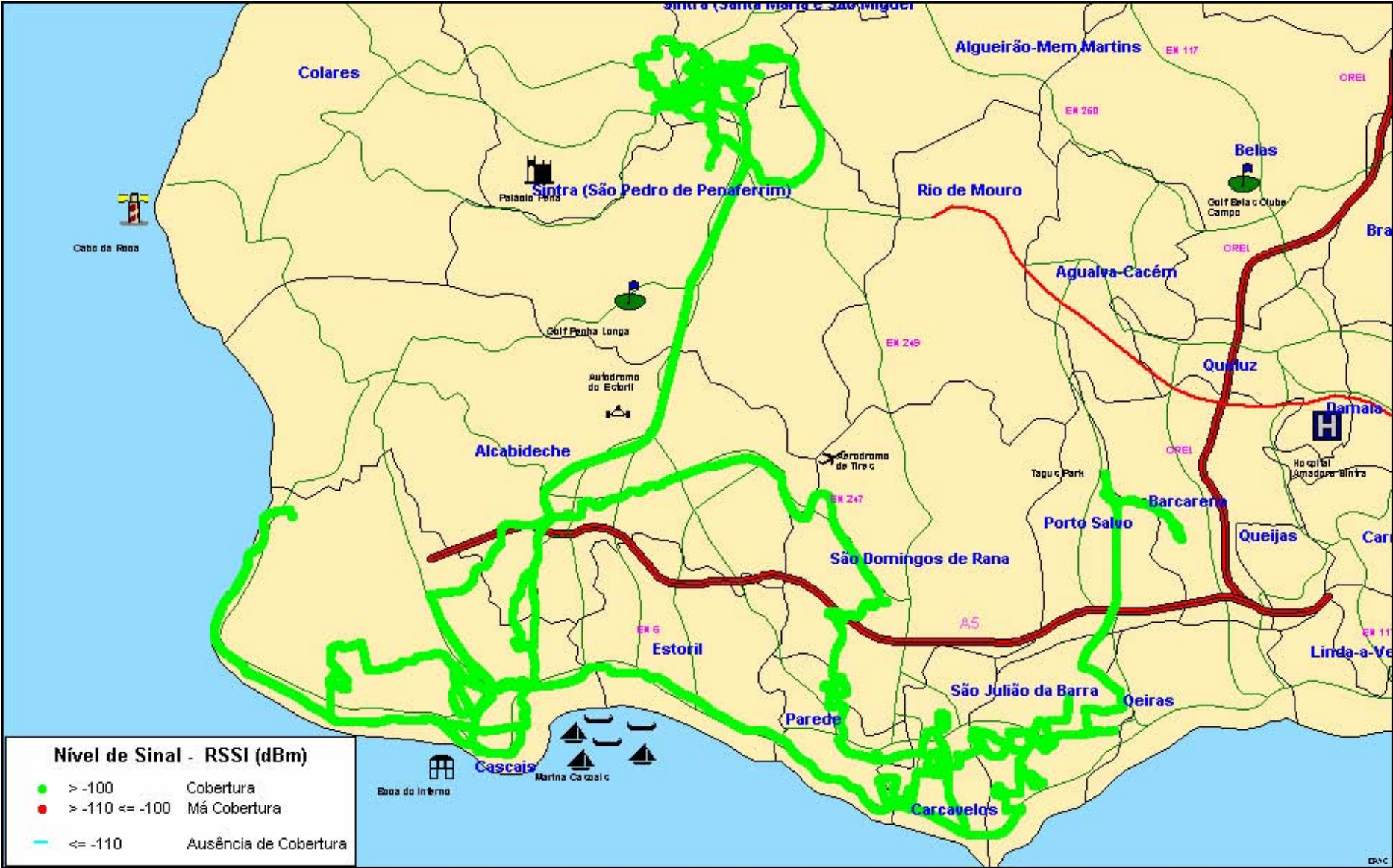
AMADORA, QUELUZ E CACÉM

OPTIMUS - PSTN



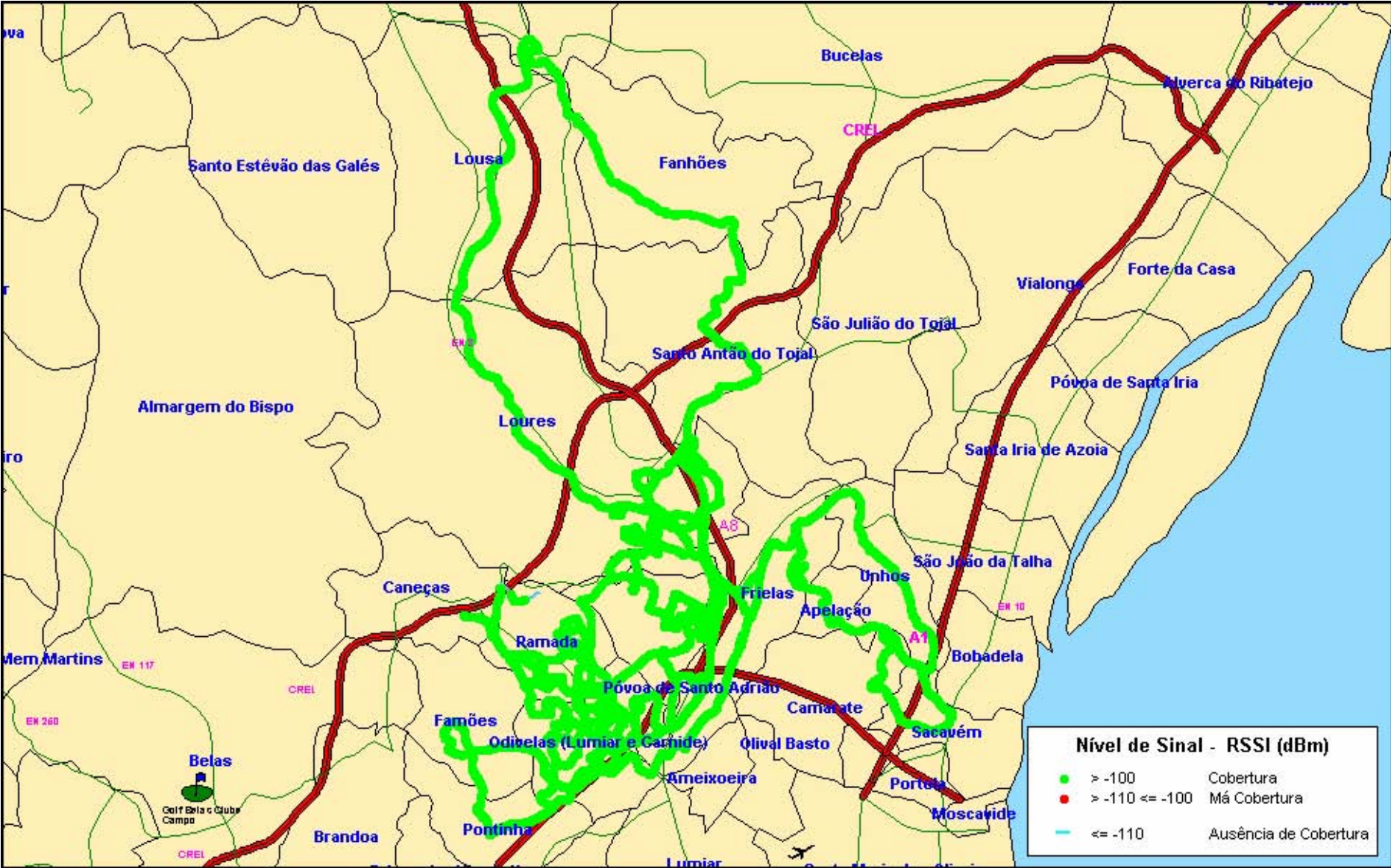
SINTRA, CASCAIS E OEIRAS

OPTIMUS - PSTN



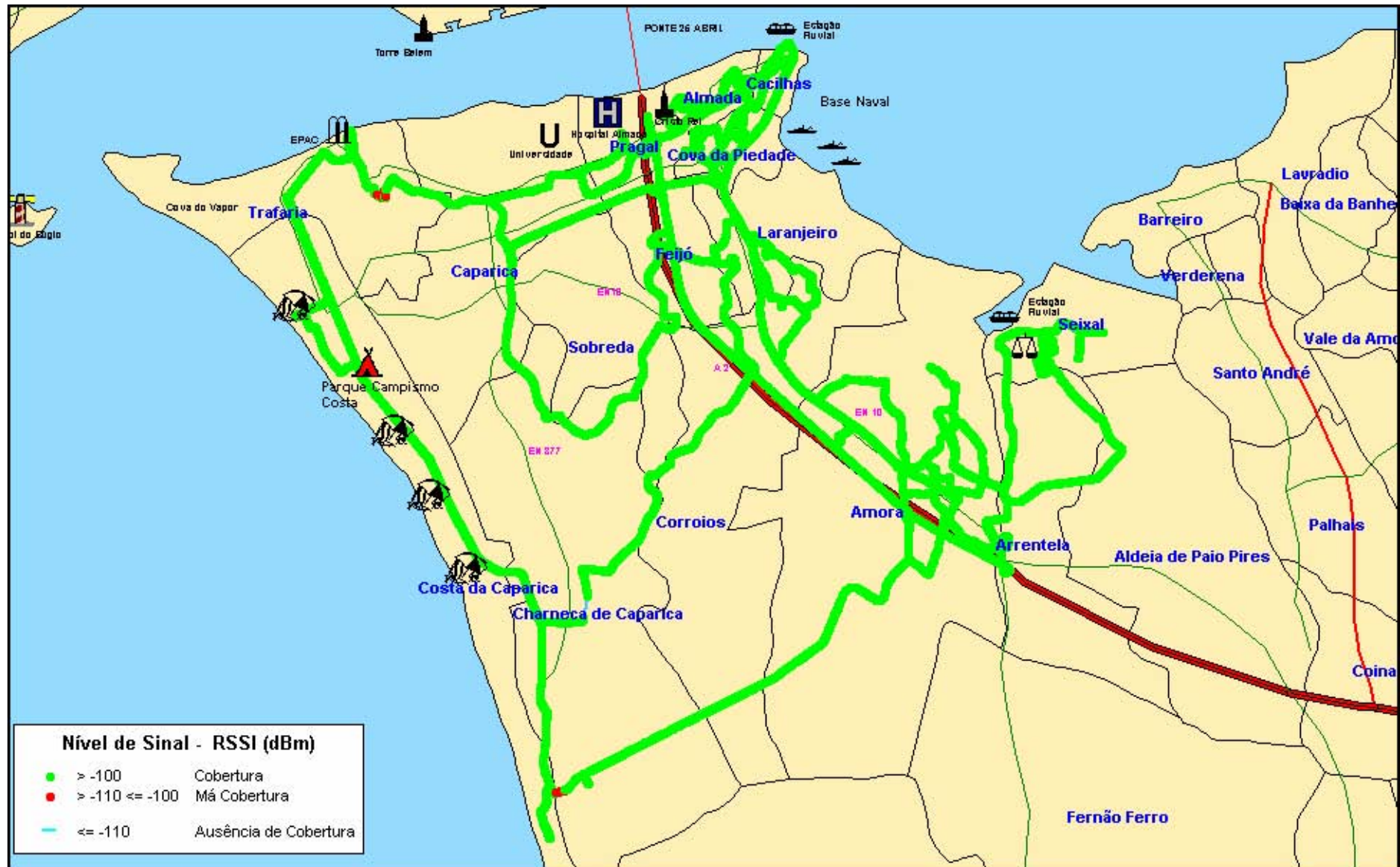
LOURES E ODIVELAS

OPTIMUS - PSTN



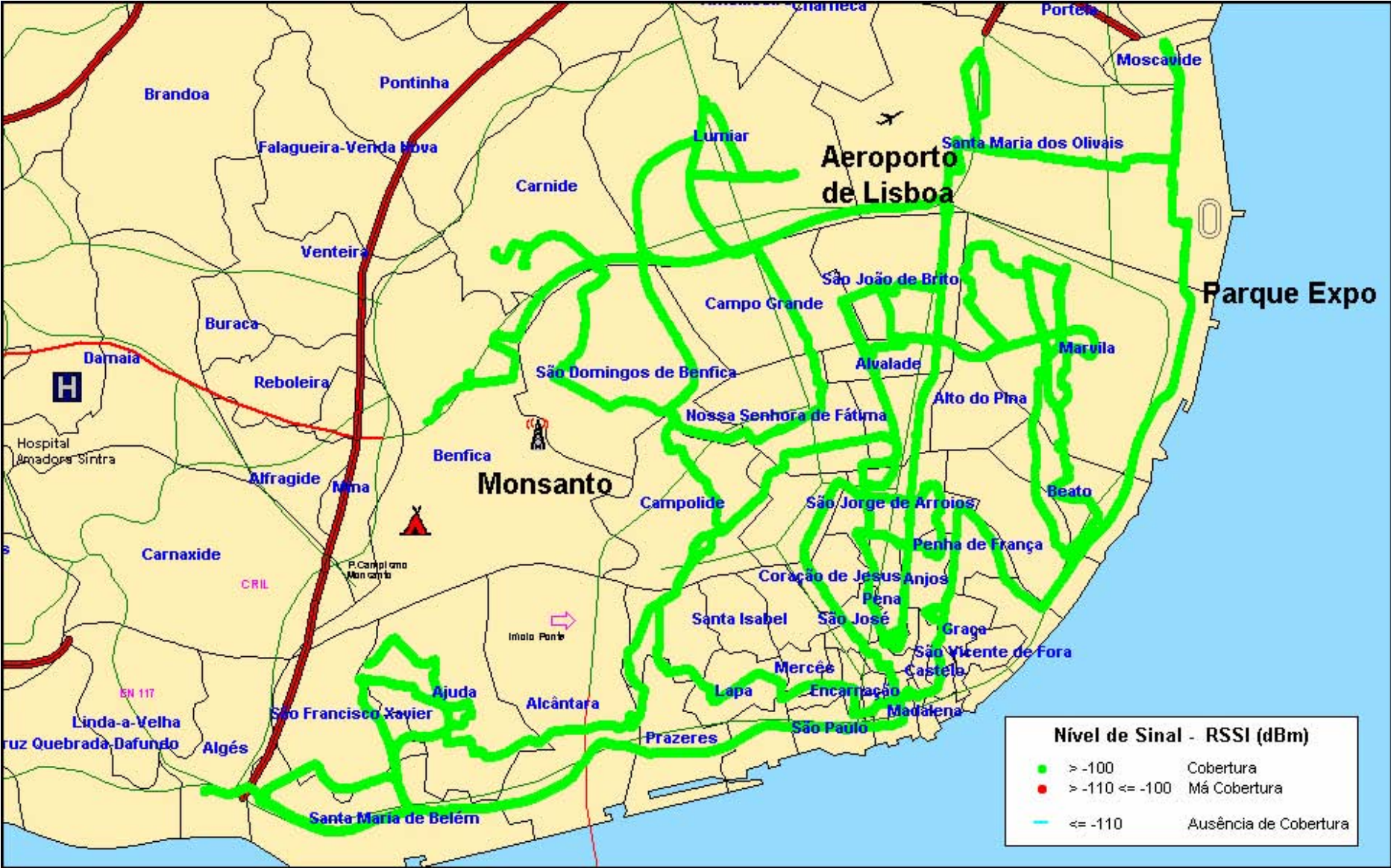
ALMADA E SEIXAL

OPTIMUS - PSTN



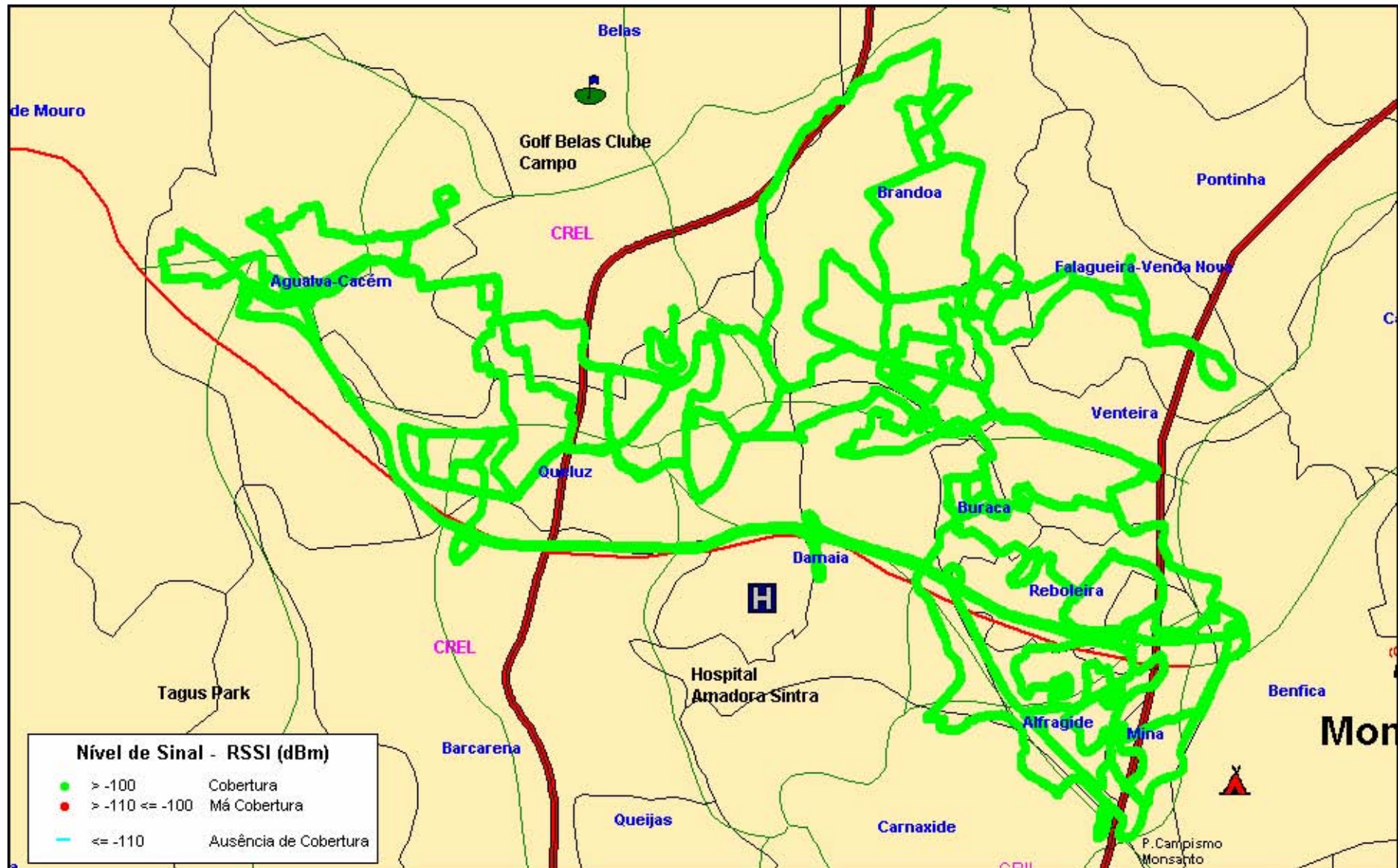
LISBON

VODAFONE - PSTN



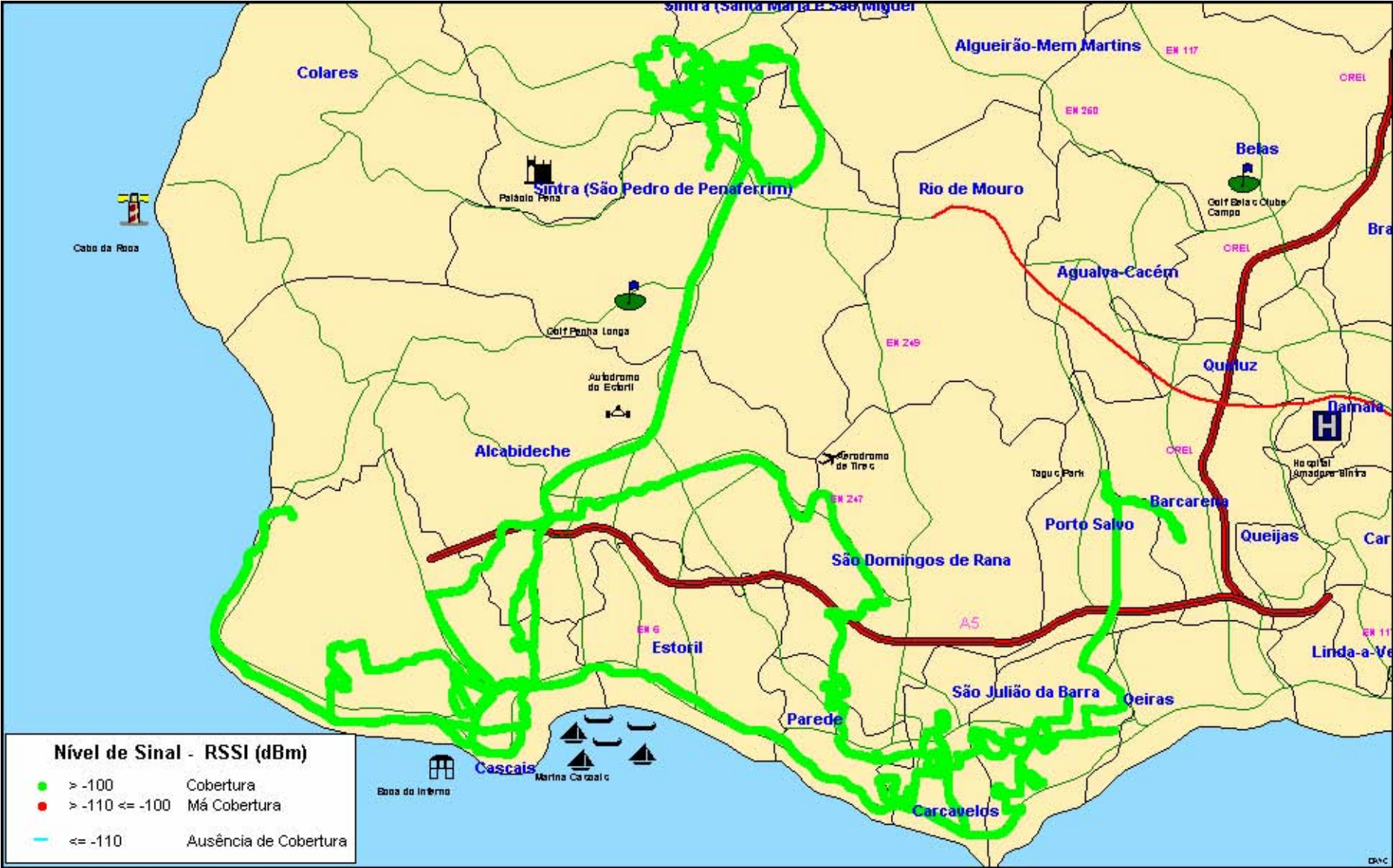
AMADORA, QUELUZ E CACÉM

VODAFONE - PSTN



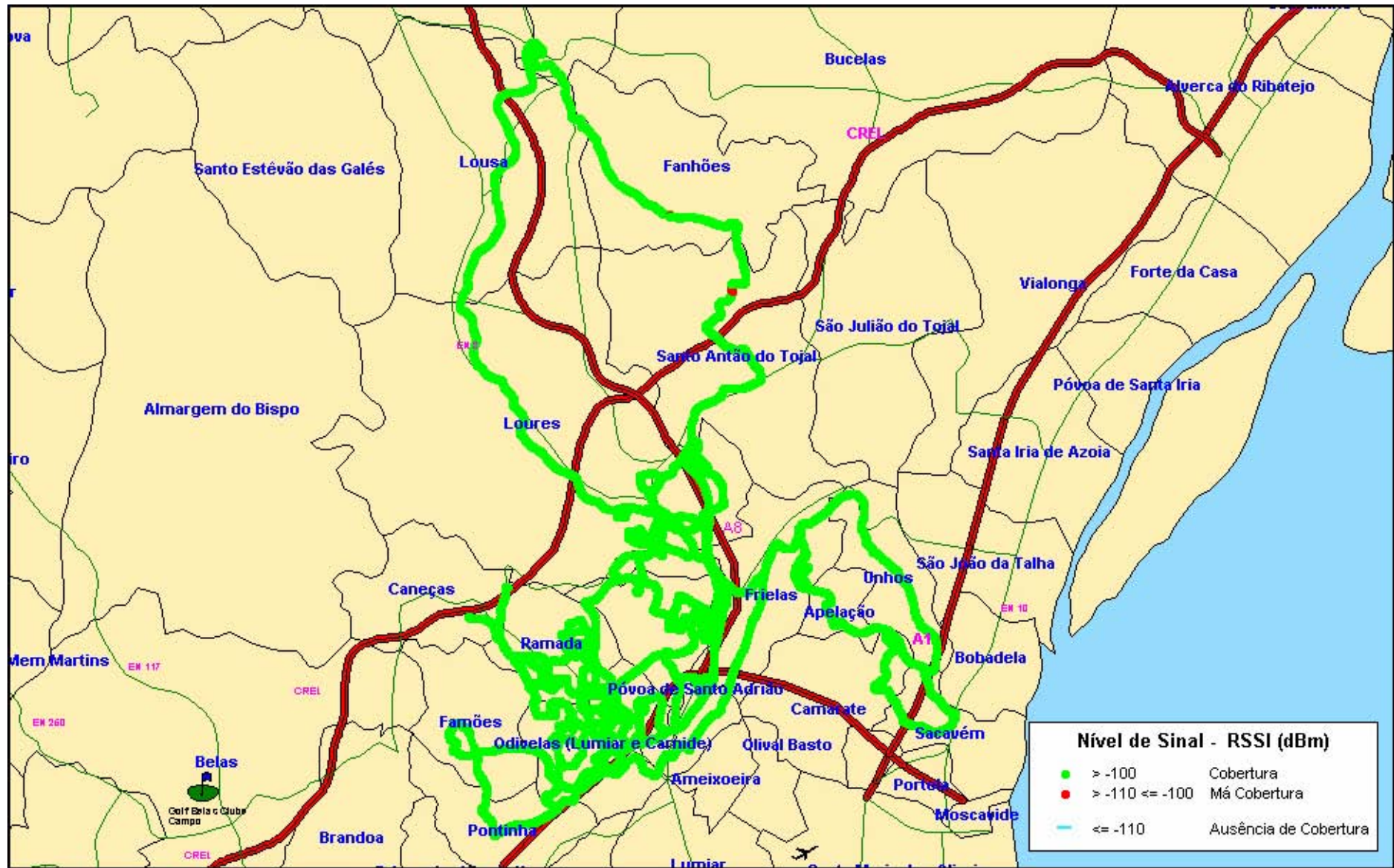
SINTRA, CASCAIS E OEIRAS

VODAFONE - PSTN



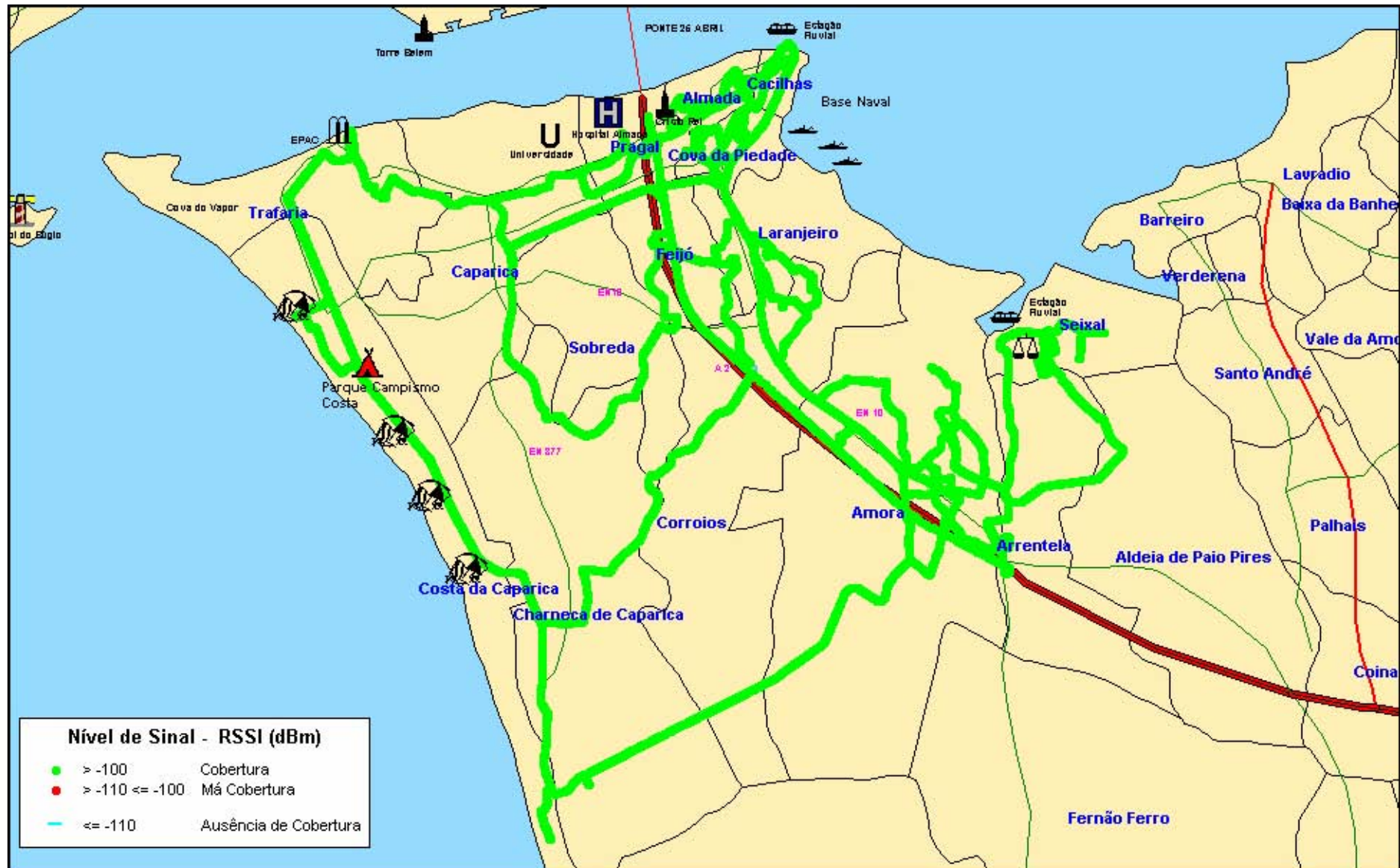
LOURES E ODIVELAS

VODAFONE - PSTN



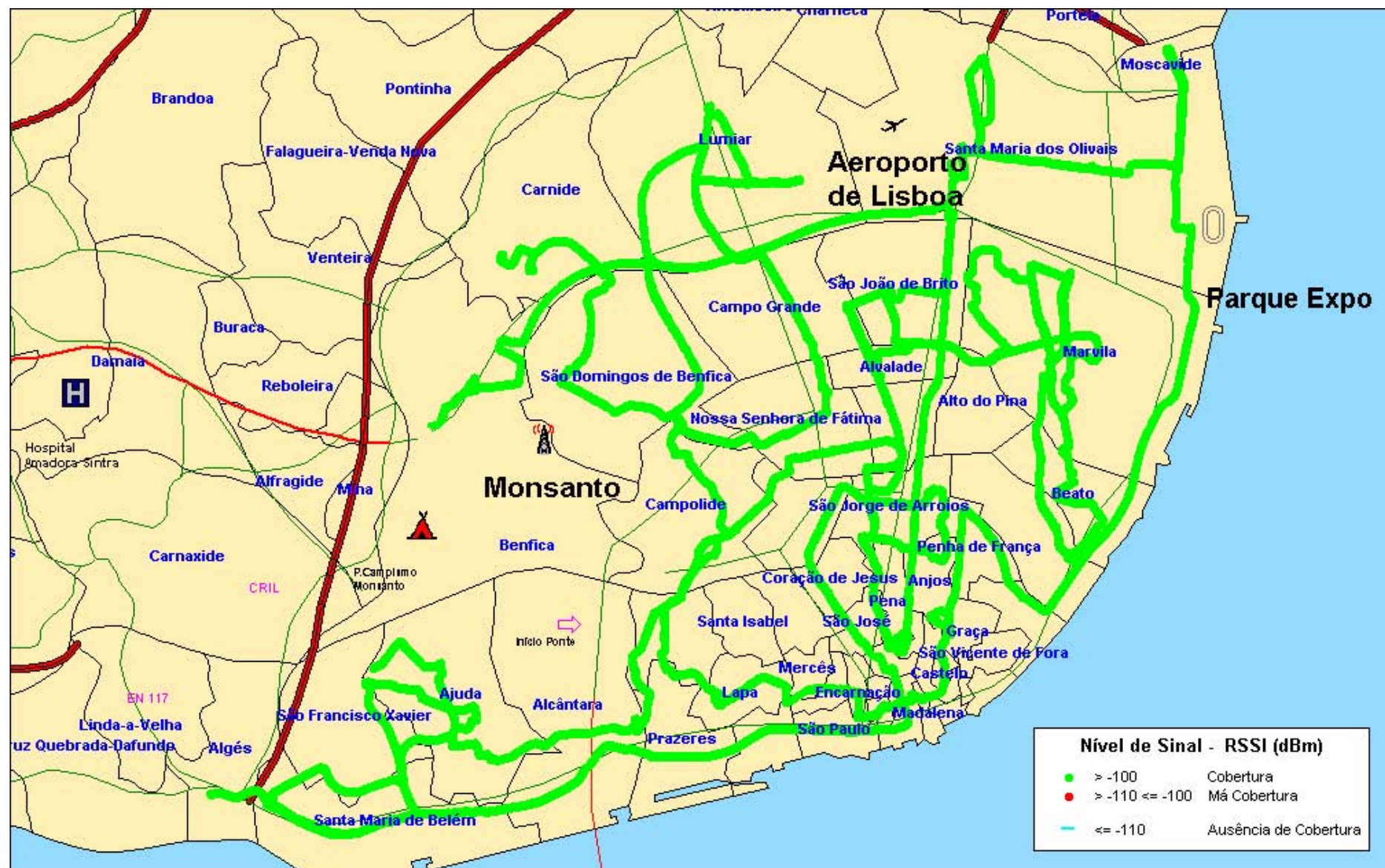
ALMADA E SEIXAL

VODAFONE - PSTN



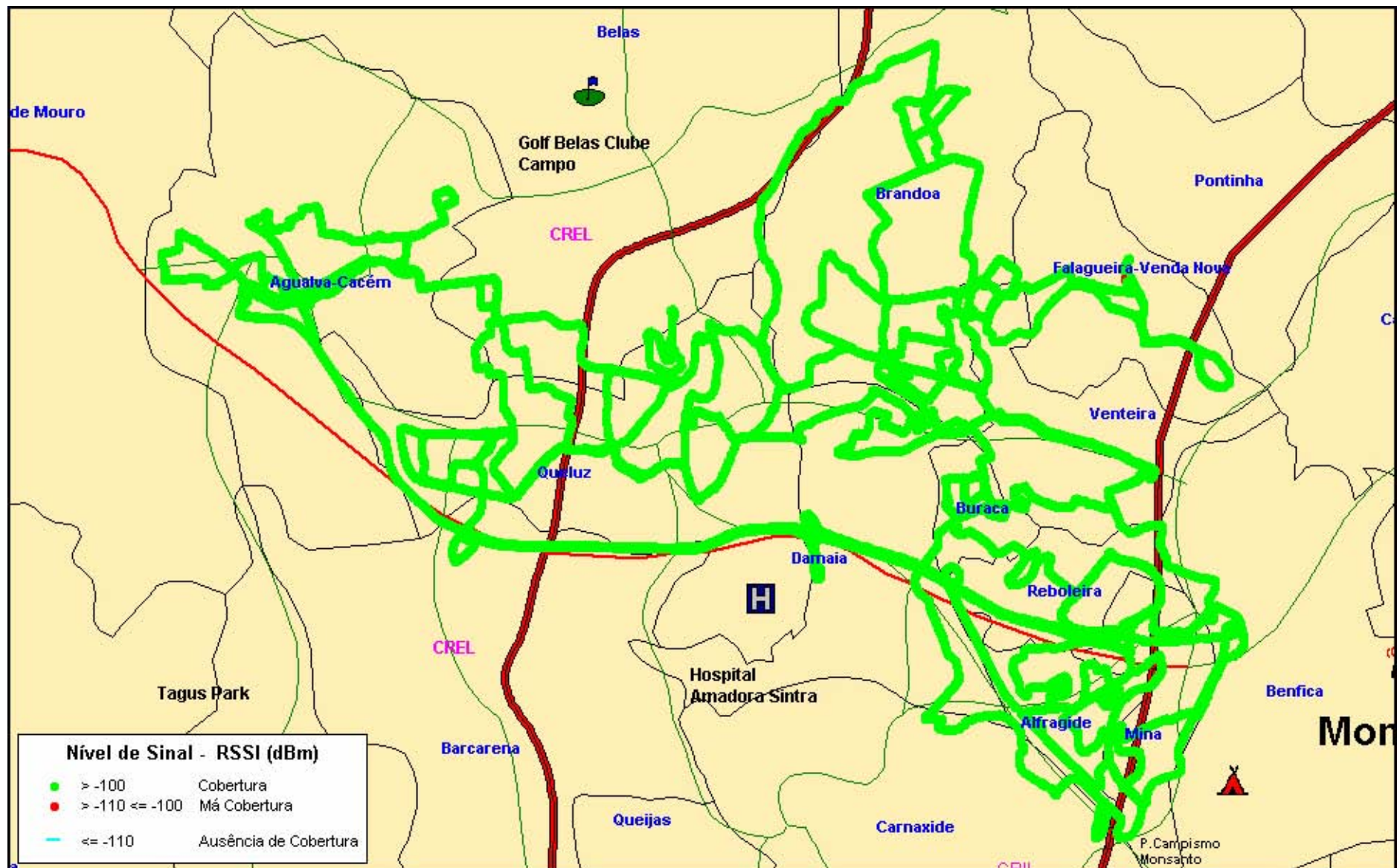
LISBON

TMN - PSTN



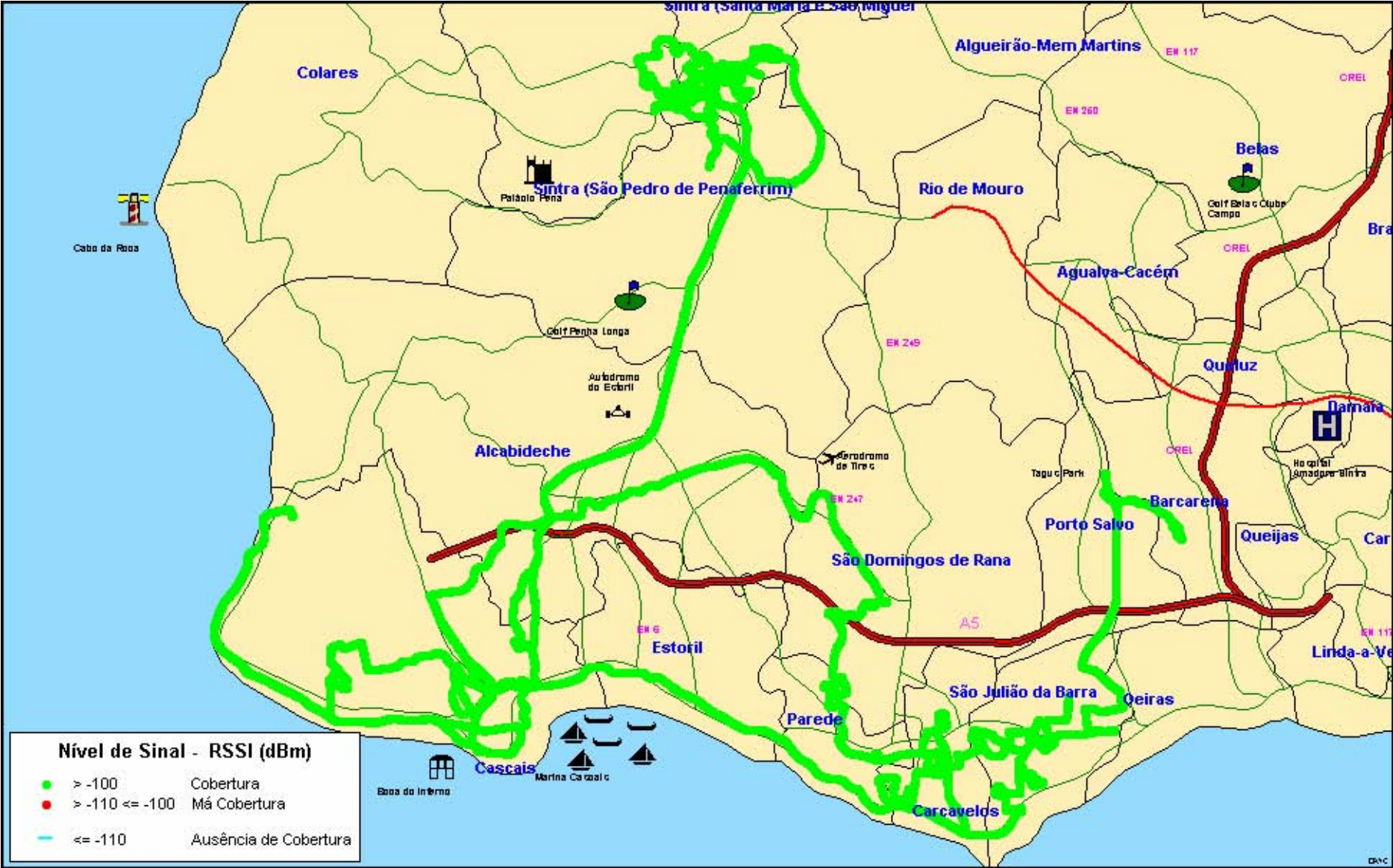
AMADORA, QUELUZ E CACÉM

TMN - PSTN



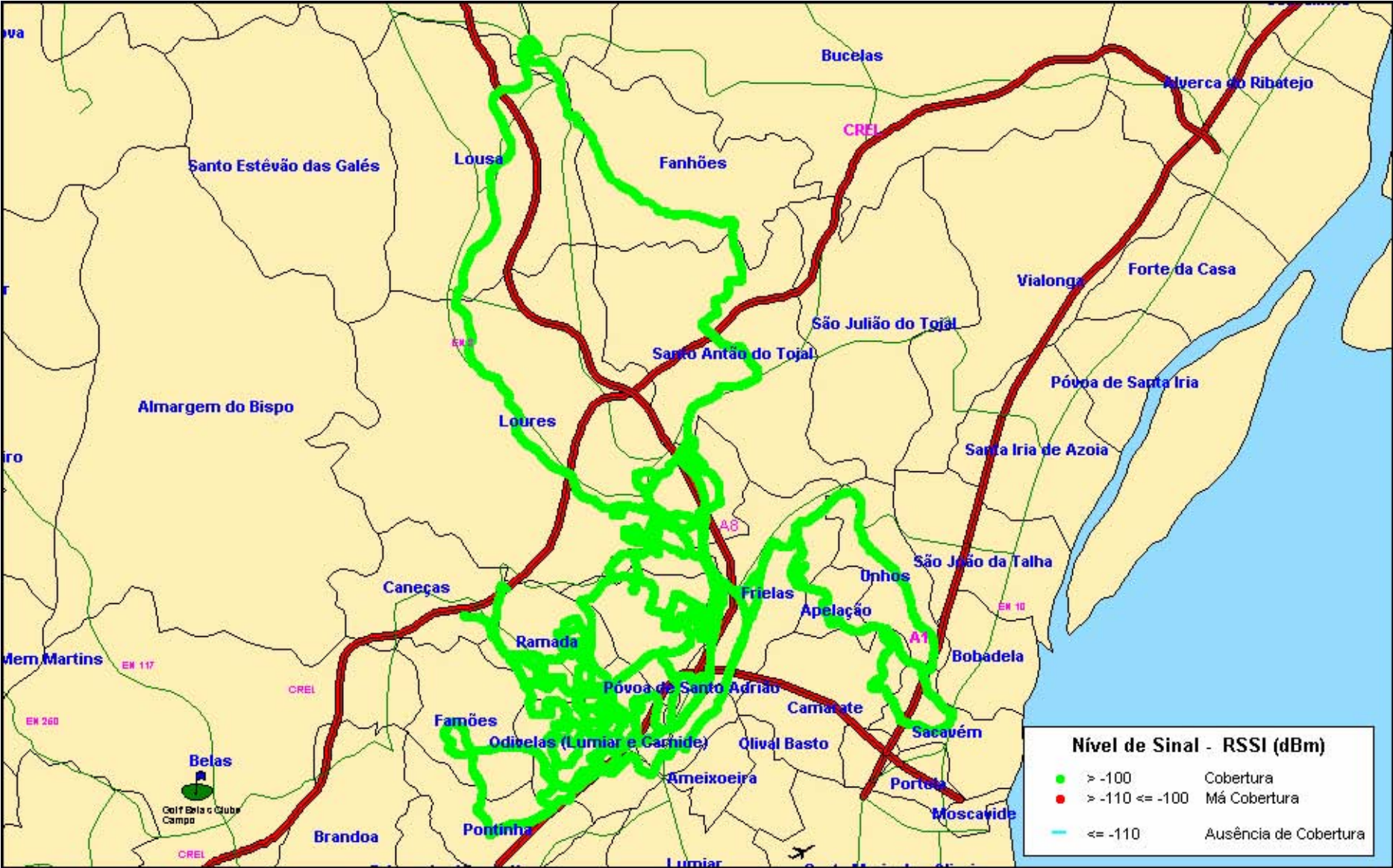
SINTRA, CASCAIS E OEIRAS

TMN - PSTN



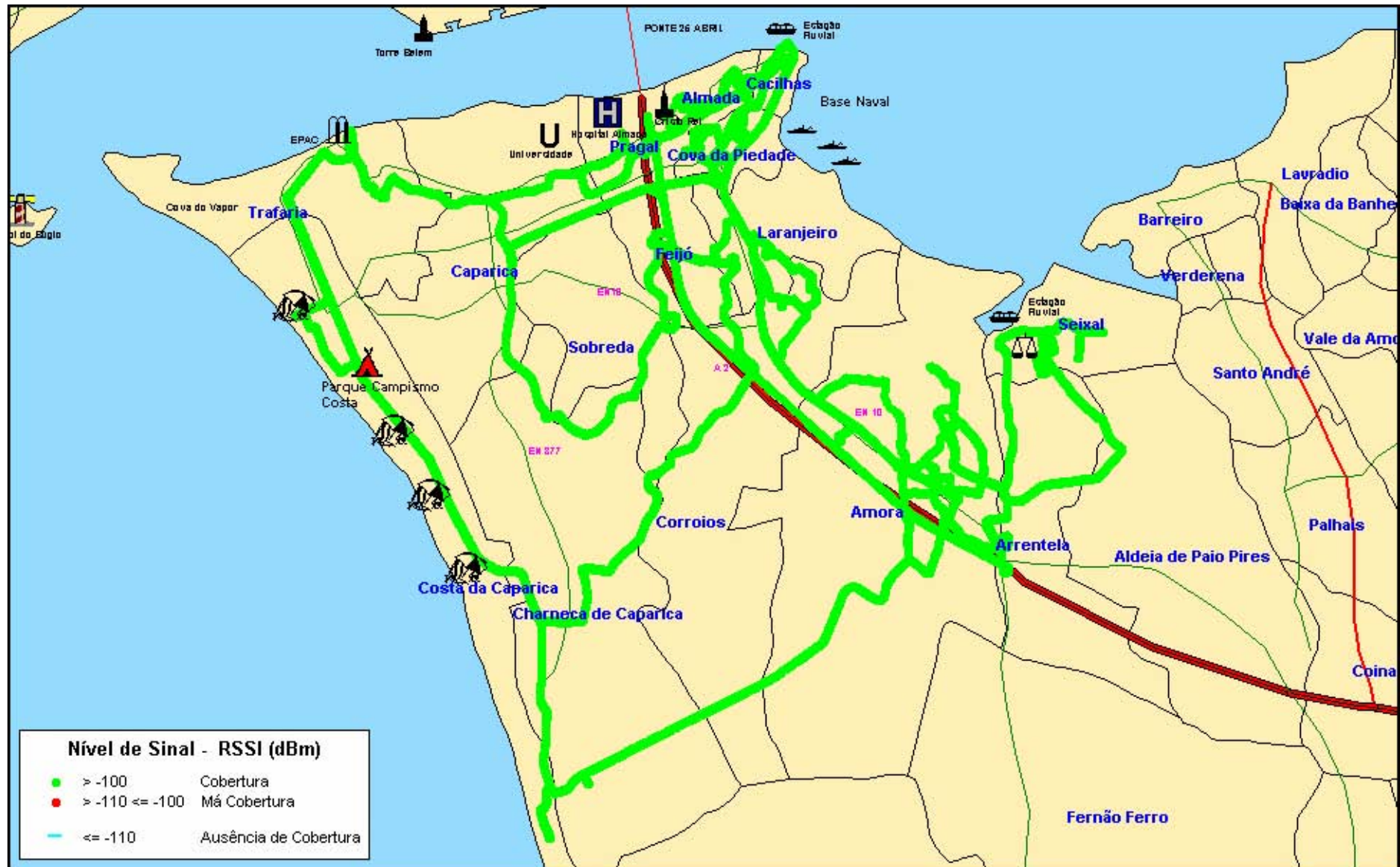
LOURES E ODIVELAS

TMN - PSTN



ALMADA E SEIXAL

TMN - PSTN



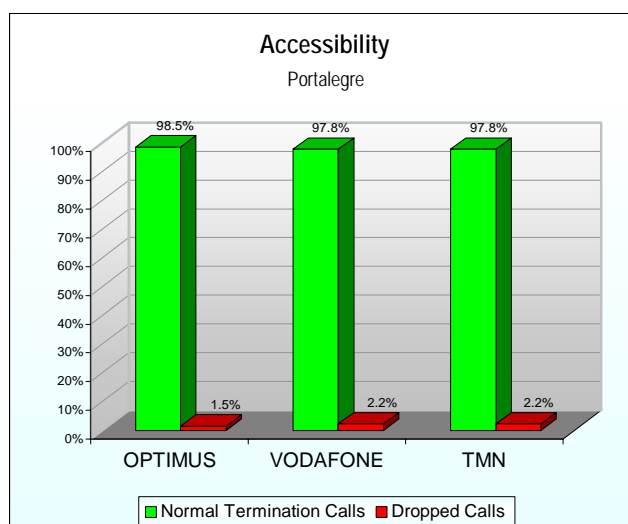
1.12 PORTALEGRE

Measurement Sessions on:

- 11 October 2005 between 14h06 and 17h09
- 12 October 2005 between 9h36 and 12h39

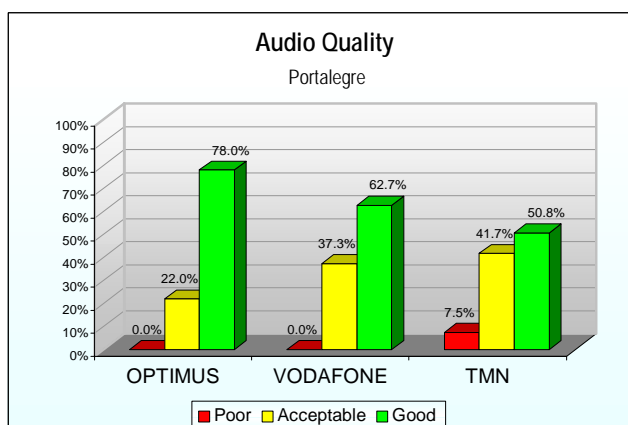
1.12.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	135	136	136
			100%	100%	100%
Routed Calls	Total	134	134	134	
	Abandoned During Conversation	1	1	1	
	Normal Termination Calls	133	133	133	
			99.3%	98.5%	98.5%
Non-Routed Calls		1	2	2	
			0.7%	1.5%	1.5%
Dropped Calls	Total	2	3	3	
	Call Ending Causes	No Service	0	0	0
		Congestion	1	1	2
		Radio Link Failure	0	0	0
		Other	1	2	1
			0.7%	1.5%	0.7%



1.12.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	268	268	266
			100%	100%	100%
Audio Quality (MOS)	Poor	0	0	20	
	Acceptable	59	100	111	
	Good	209	168	135	
			22.0%	37.3%	41.7%
			78.0%	62.7%	50.8%

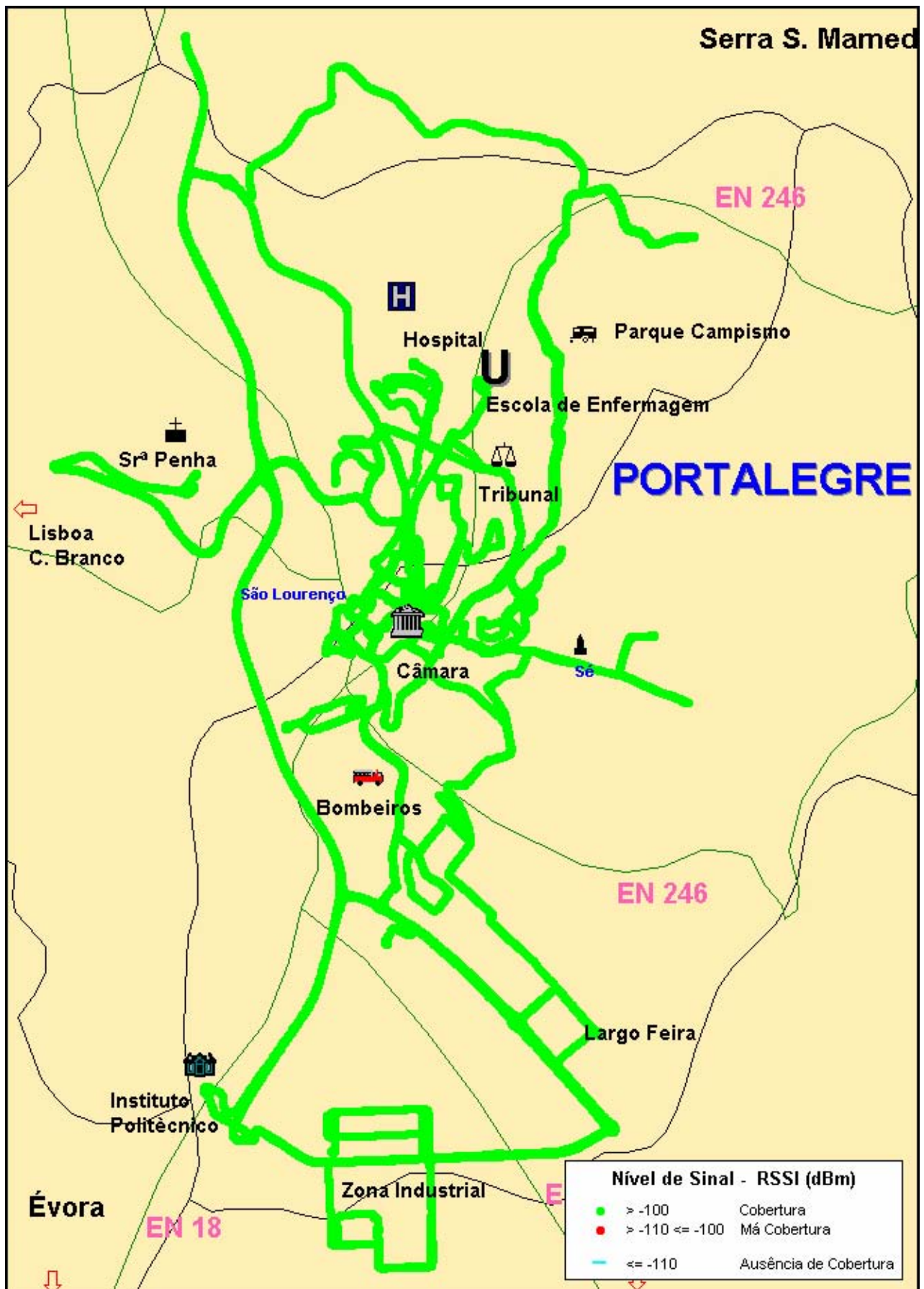


1.12.3 COVERAGE

(Following Pages)

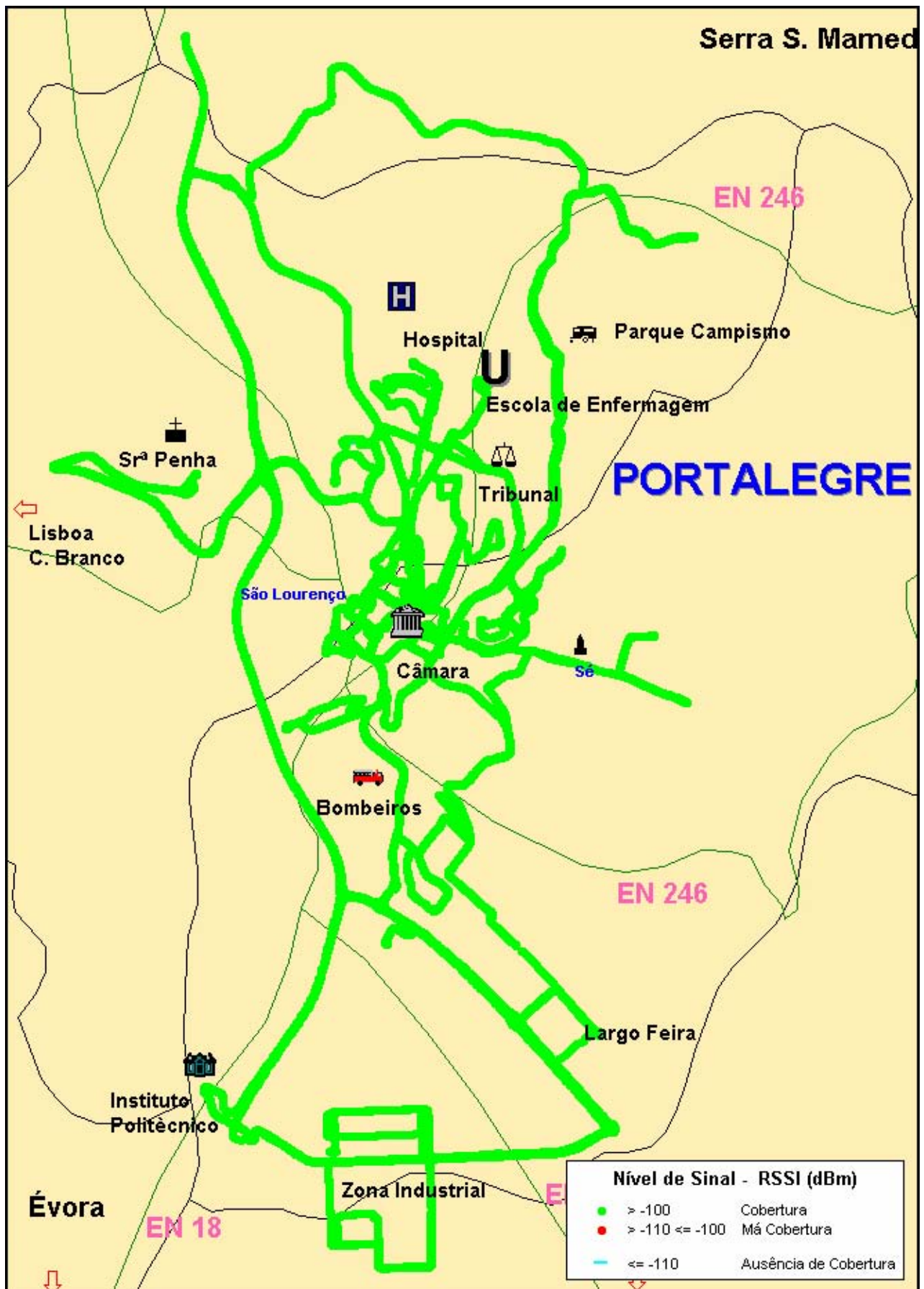
PORTALEGRE

OPTIMUS - PSTN



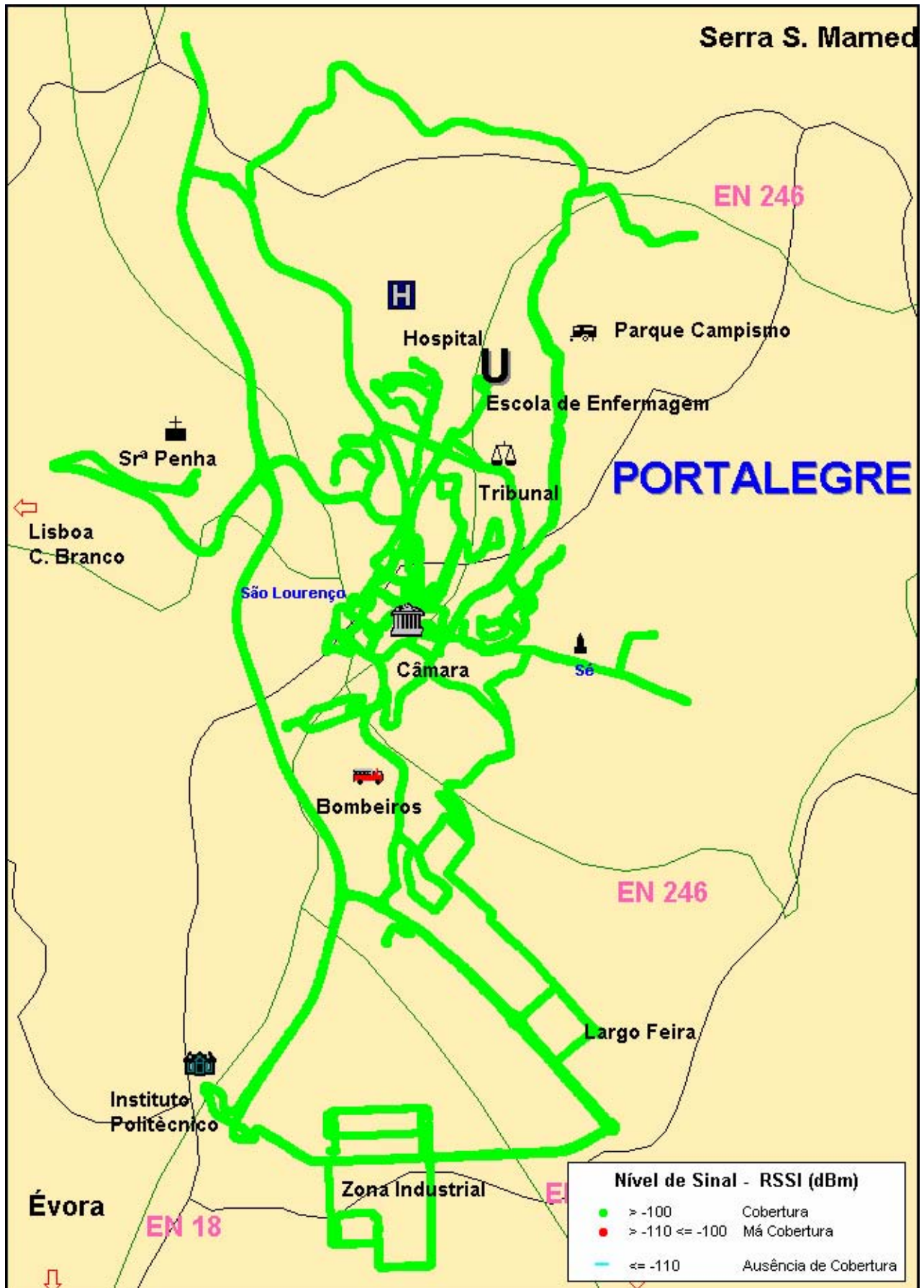
PORTALEGRE

VODAFONE - PSTN



PORTALEGRE

TMN - PSTN



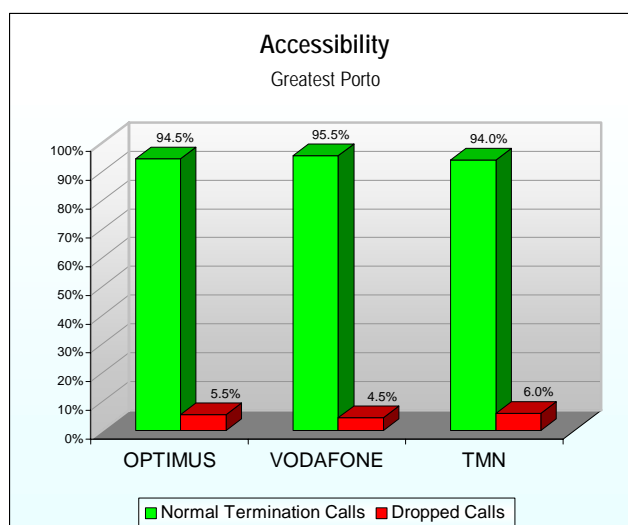
1.13 PORTO, V. N. GAIA, MAIA, MATOSINHOS, GONDOMAR

Measurement Sessions on:

- 10 October 2005 between 7h57 and 11h33 and between 16h28 and 20h00
- 11 October 2005 between 7h53 and 11h34 and between 16h26 and 20h00
- 12 October 2005 between 8h00 and 11h37

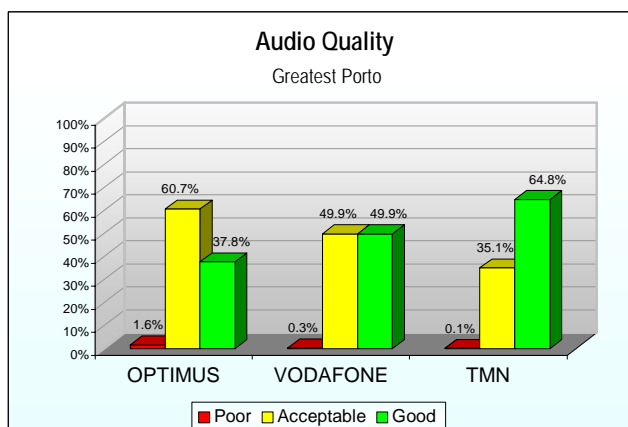
1.13.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	398	398	398
			100%	100%	100%
Routed Calls	Total		388	388	381
	Abandoned During Conversation		12	8	7
	Normal Termination Calls		376	380	374
			94.5%	95.5%	94.0%
Non-Routed Calls			10	10	17
			2.5%	2.5%	4.3%
Dropped Calls	Total		22	18	24
	Call Ending Causes	No Service	1	0	2
		Congestion	13	10	9
		Radio Link Failure	4	4	1
		Other	4	4	12
			1.0%	1.0%	3.0%



1.13.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	765	770	758
			100%	100%	100%
Audio Quality (MOS)	Poor		12	2	1
	Acceptable		464	384	266
	Good		289	384	491
			37.8%	49.9%	64.8%

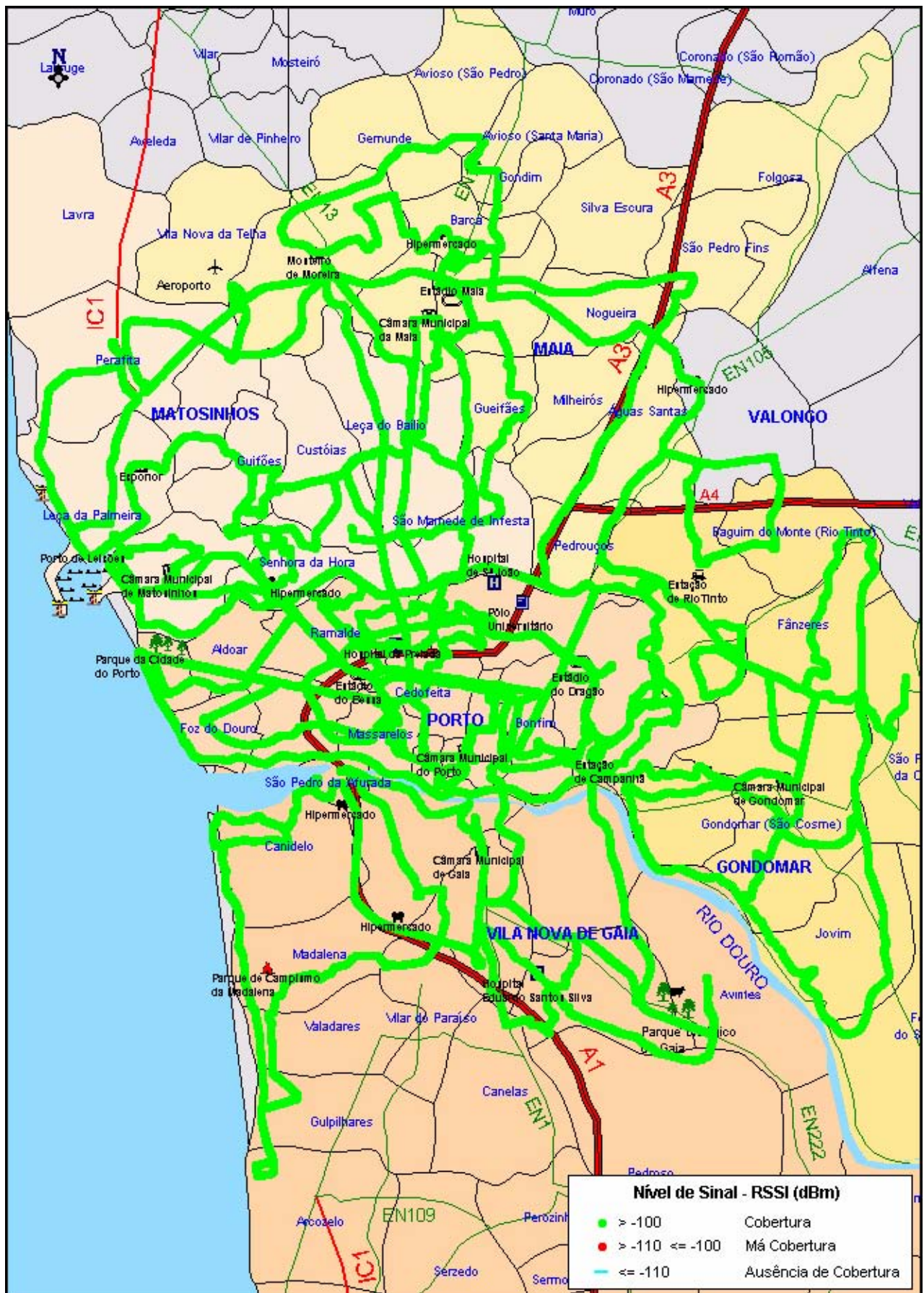


1.13.3 COVERAGE

(Following Pages)

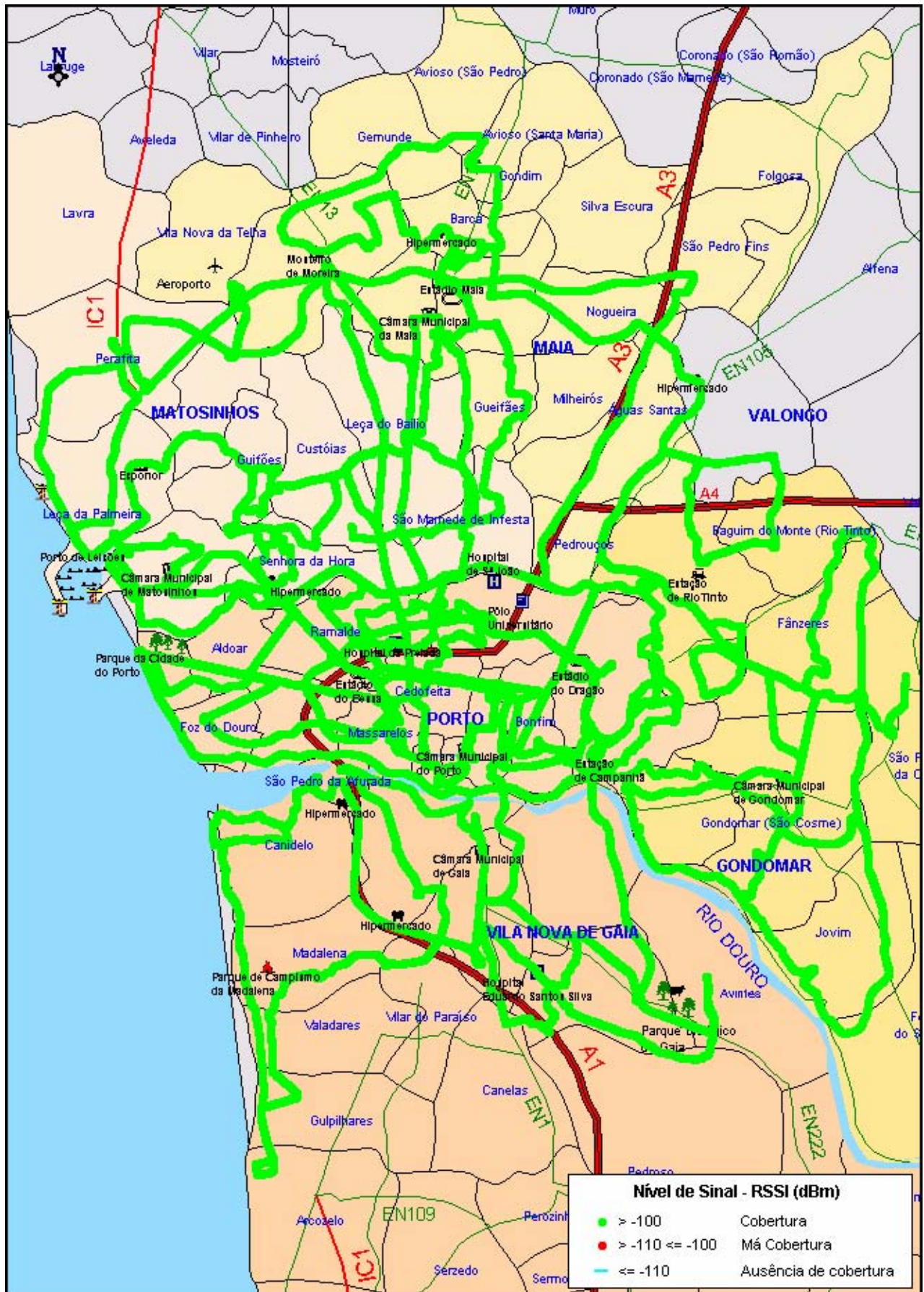
PORTO, V. N. GAIA, MAIA, MATOSINHOS, GONDOMAR

OPTIMUS - PSTN



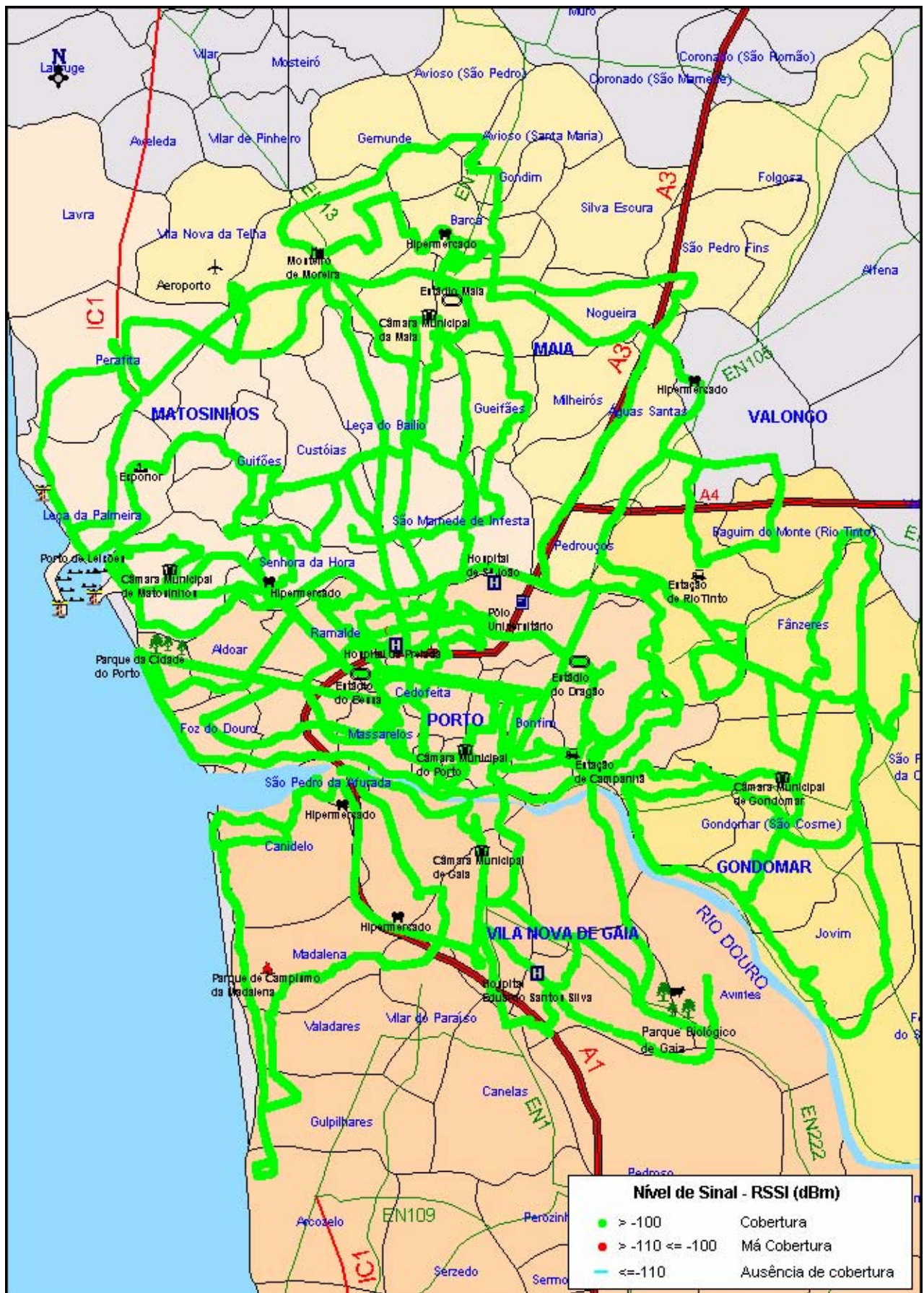
PORTO, V. N. GAIA, MAIA, MATOSINHOS, GONDOMAR

VODAFONE - PSTN



PORTO, V. N. GAIA, MAIA, MATOSINHOS, GONDOMAR

TMN - PSTN



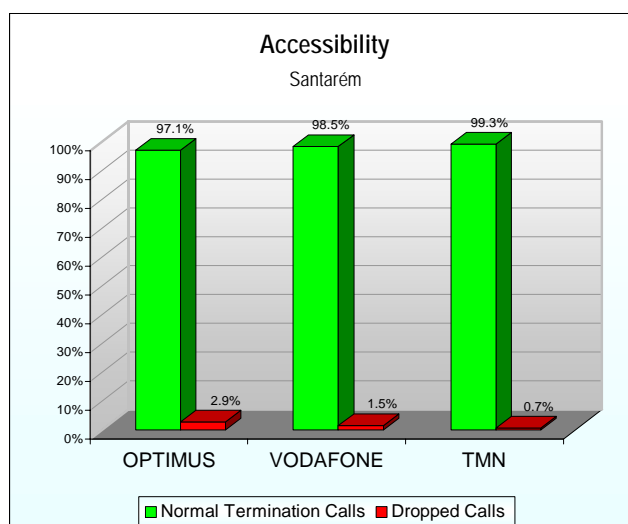
1.14 SANTARÉM

Measurement Sessions on:

- 29 September 2005 between 13h08 and 16h16
- 30 September 2005 between 8h40 and 11h43

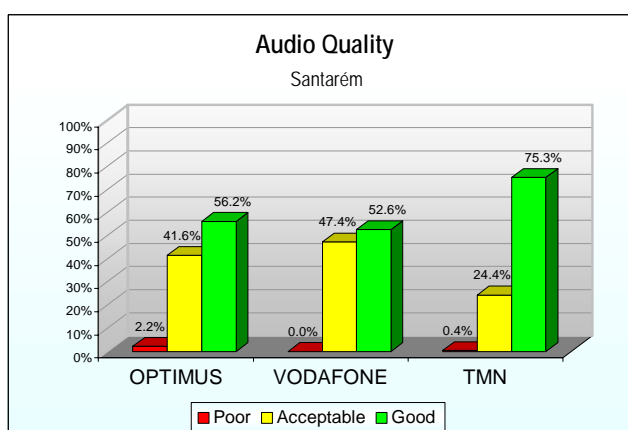
1.14.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN	
		Total	137	137	137	
Routed Calls	Total		135	136	136	
			98.5%	99.3%	99.3%	
	Abandoned During Conversation		2	1	0	
			1.5%	0.7%	0.0%	
	Normal Termination Calls		133	135	136	
			97.1%	98.5%	99.3%	
Non-Routed Calls			2	1	1	
			1.5%	0.7%	0.7%	
Dropped Calls	Total		4	2	1	
			2.9%	1.5%	0.7%	
	Call Ending Causes	No Service		0	0	0
				0.0%	0.0%	0.0%
		Congestion		2	2	1
				1.5%	1.5%	0.7%
		Radio Link Failure		0	0	0
		0.0%	0.0%	0.0%		
Other		2	0	0		
		1.5%	0.0%	0.0%		



1.14.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	267	270	271
Audio Quality (MOS)	Poor		6	0	1
			2.2%	0.0%	0.4%
	Acceptable		111	128	66
			41.6%	47.4%	24.4%
	Good		150	142	204
			56.2%	52.6%	75.3%

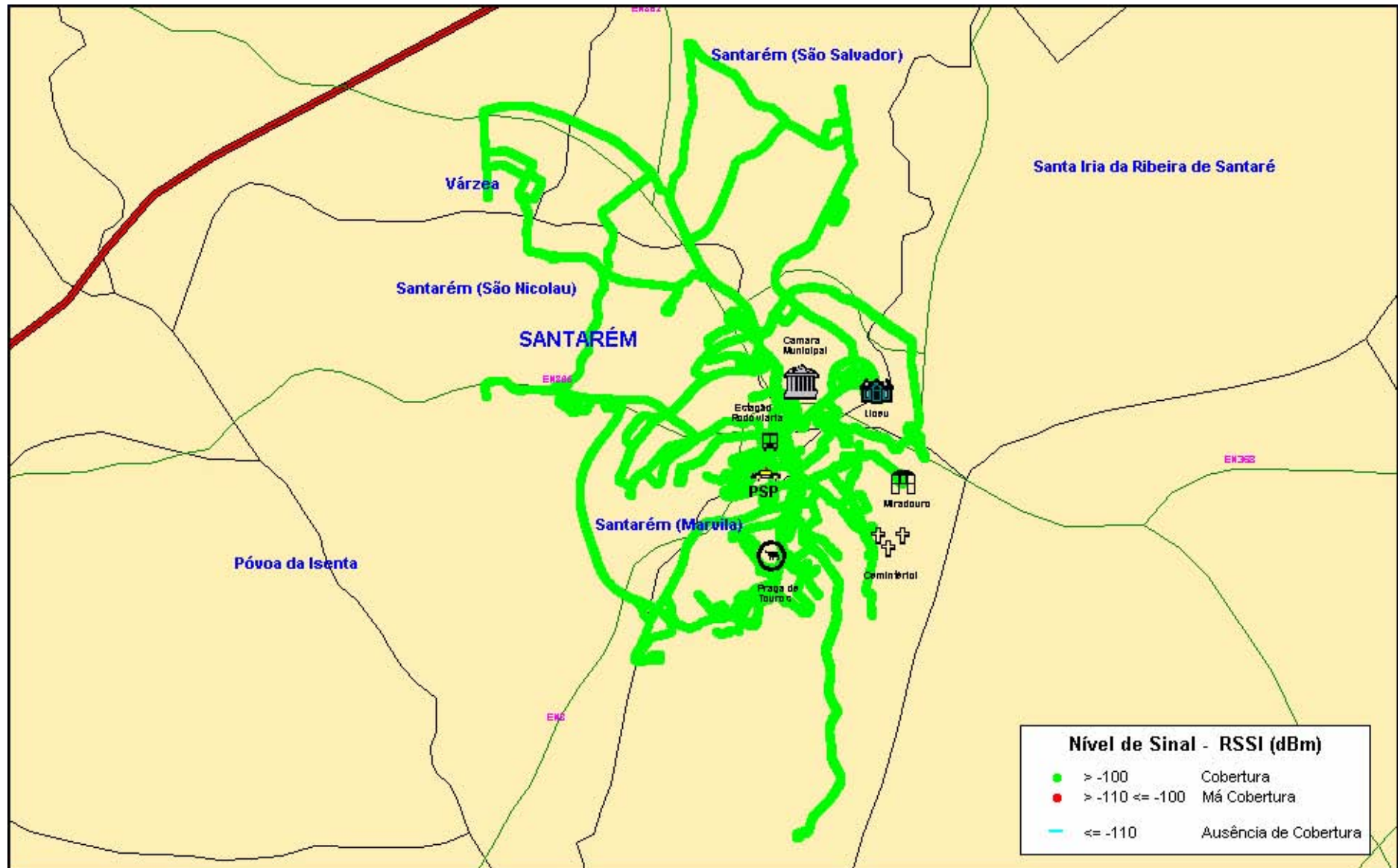


1.14.3 COVERAGE

(Following Pages)

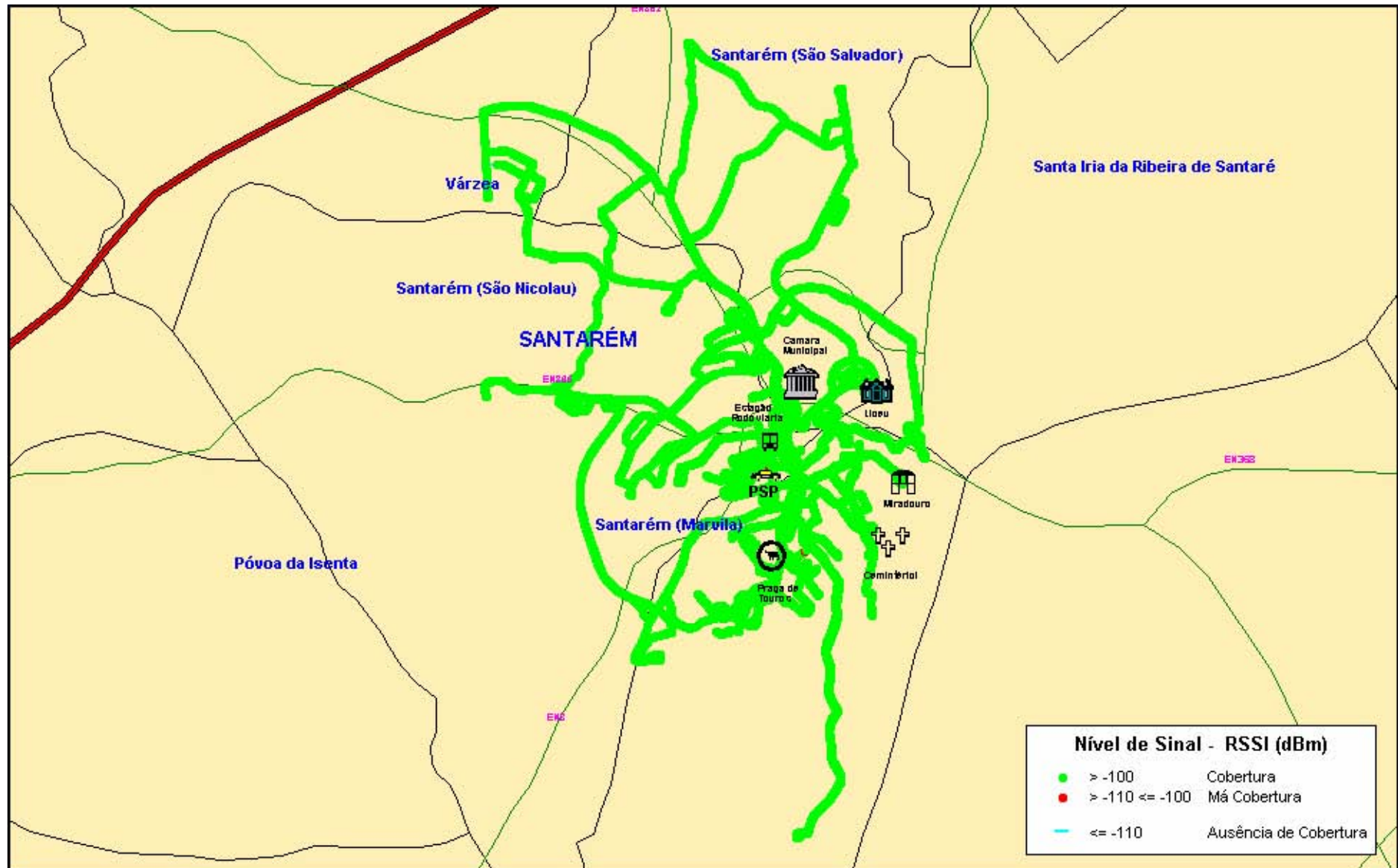
SANTARÉM

OPTIMUS - PSTN



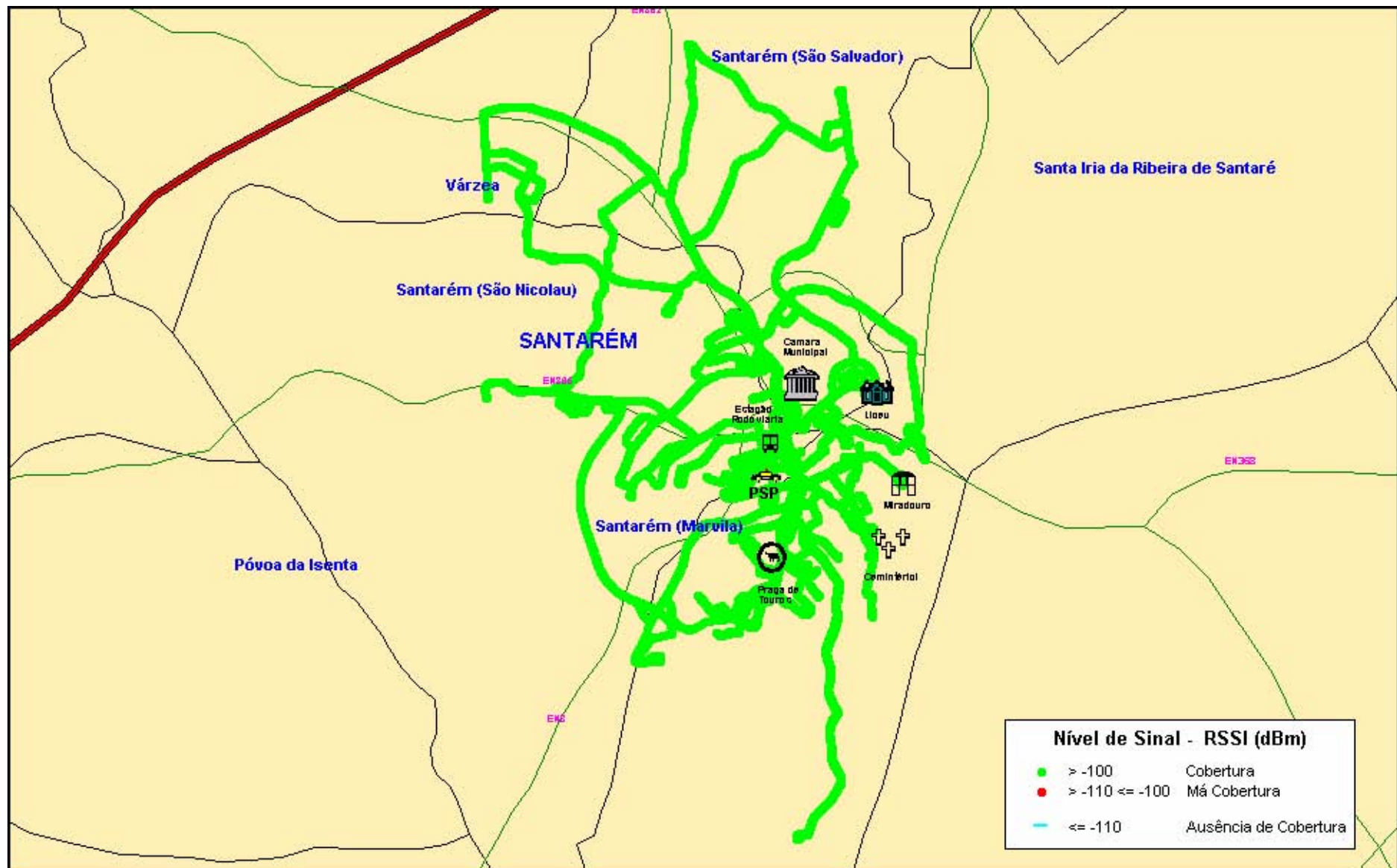
SANTARÉM

VODAFONE - PSTN



SANTARÉM

TMN - PSTN



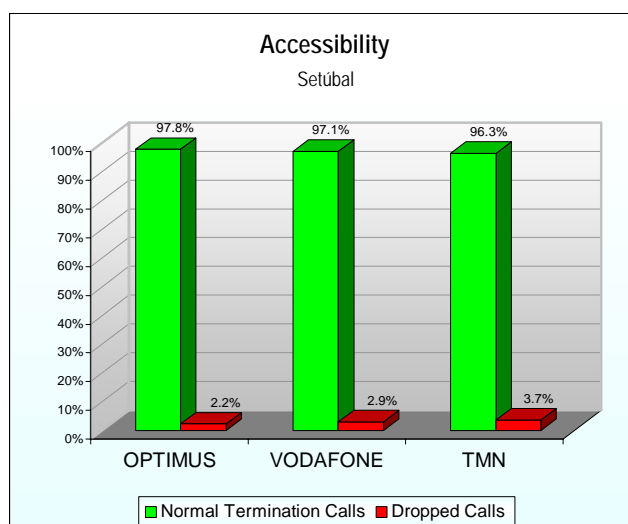
1.15 SETÚBAL

Measurement Sessions on:

- 22 September 2005 between 13h51 and 16h58
- 23 September 2005 between 9h07 and 12h07

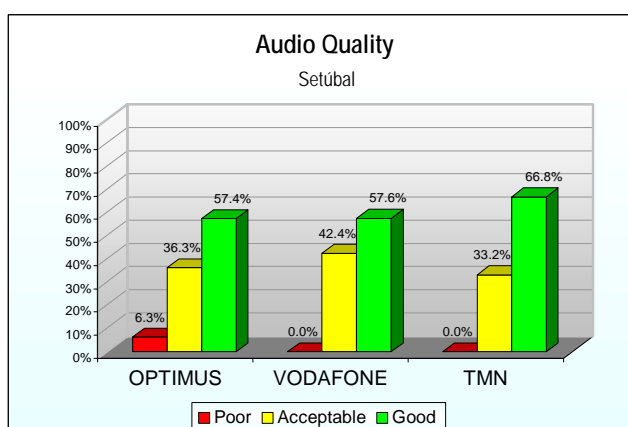
1.15.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	136 100%	136 100%	136 100%
Routed Calls	Total	136 100.0%	132 97.1%	131 96.3%	
	Abandoned During Conversation	3 2.2%	0 0.0%	0 0.0%	
	Normal Termination Calls	133 97.8%	132 97.1%	131 96.3%	
Non-Routed Calls		0 0.0%	4 2.9%	5 3.7%	
Dropped Calls	Total	3 2.2%	4 2.9%	5 3.7%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	0 0.0%	4 2.9%	3 2.2%
		Radio Link Failure	2 1.5%	0 0.0%	0 0.0%
		Other	1 0.7%	0 0.0%	2 1.5%



1.15.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	270 100%	264 100%	262 100%
Audio Quality (MOS)	Poor	17 6.3%	0 0.0%	0 0.0%	
	Acceptable	98 36.3%	112 42.4%	87 33.2%	
	Good	155 57.4%	152 57.6%	175 66.8%	



1.15.3 COVERAGE

(Following Pages)

SETÚBAL

OPTIMUS - PSTN



SETÚBAL

VODAFONE - PSTN



SETÚBAL

TMN - PSTN



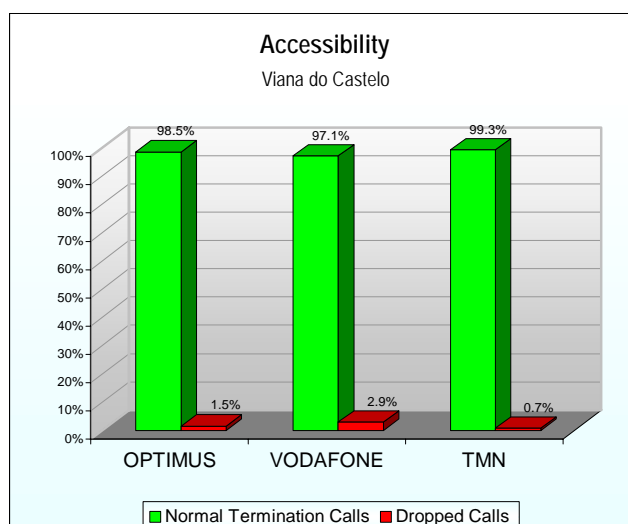
1.16 VIANA DO CASTELO

Measurement Sessions on:

- 26 September 2005 between 9h05 and 12h14
- 7 October 2005 between 12h47 and 15h49

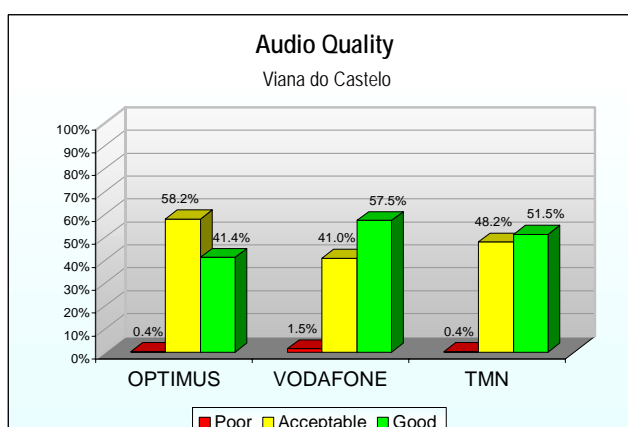
1.16.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	136	138	137
			100%	100%	100%
Routed Calls	Total	136	135	136	
	Abandoned During Conversation	2	1	0	
	Normal Termination Calls	134	134	136	
			98.5%	97.1%	99.3%
Non-Routed Calls		0	3	1	
			0.0%	2.2%	0.7%
Dropped Calls	Total	2	4	1	
	Call Ending Causes	No Service	0	0	0
		Congestion	1	2	1
		Radio Link Failure	0	0	0
		Other	1	2	0
			0.7%	1.4%	0.0%



1.16.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	268	268	272
			100%	100%	100%
Audio Quality (MOS)	Poor	1	4	1	
	Acceptable	156	110	131	
	Good	111	154	140	
			0.4%	1.5%	0.4%
			58.2%	41.0%	48.2%
			41.4%	57.5%	51.5%

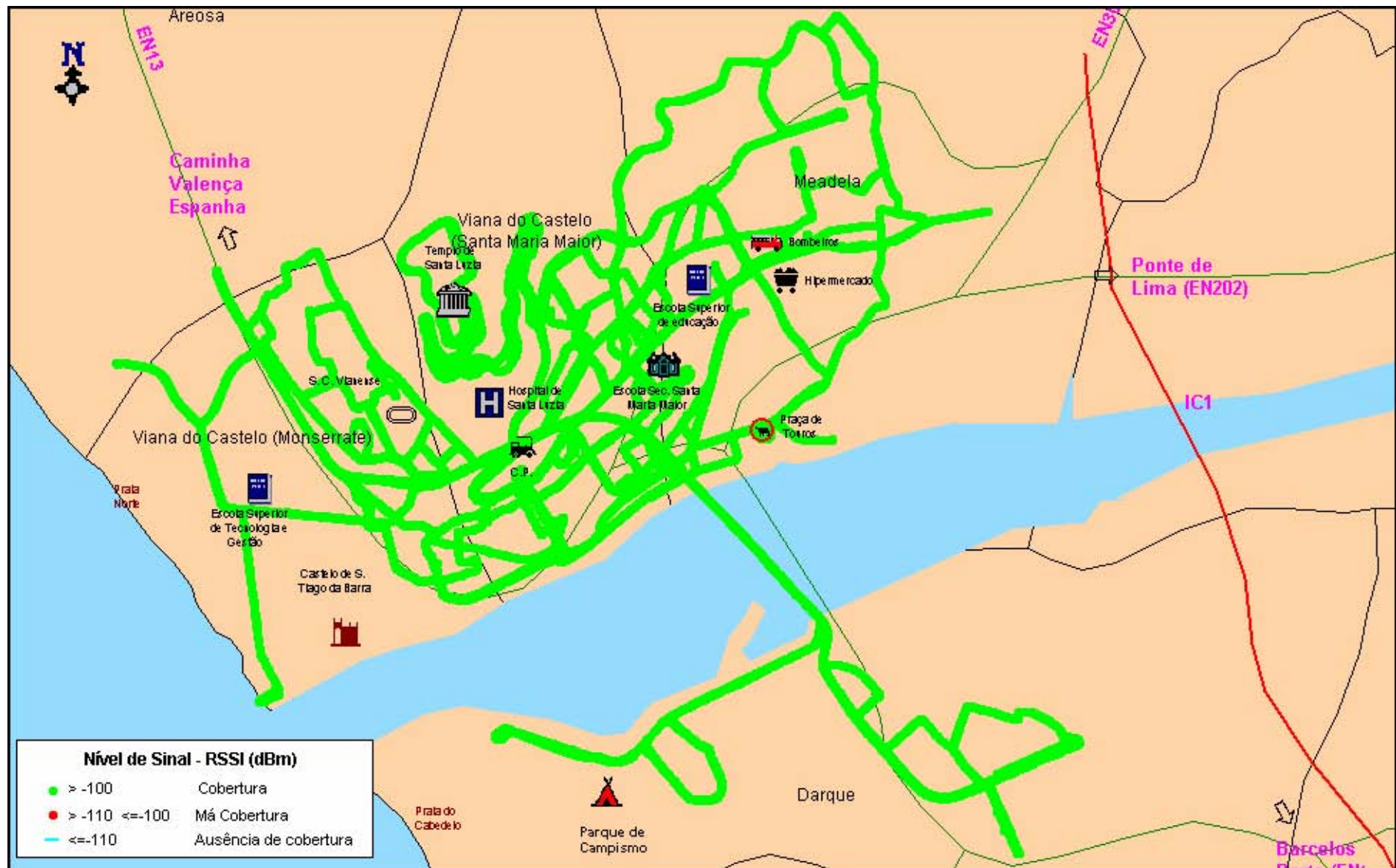


1.16.3 COVERAGE

(Following Pages)

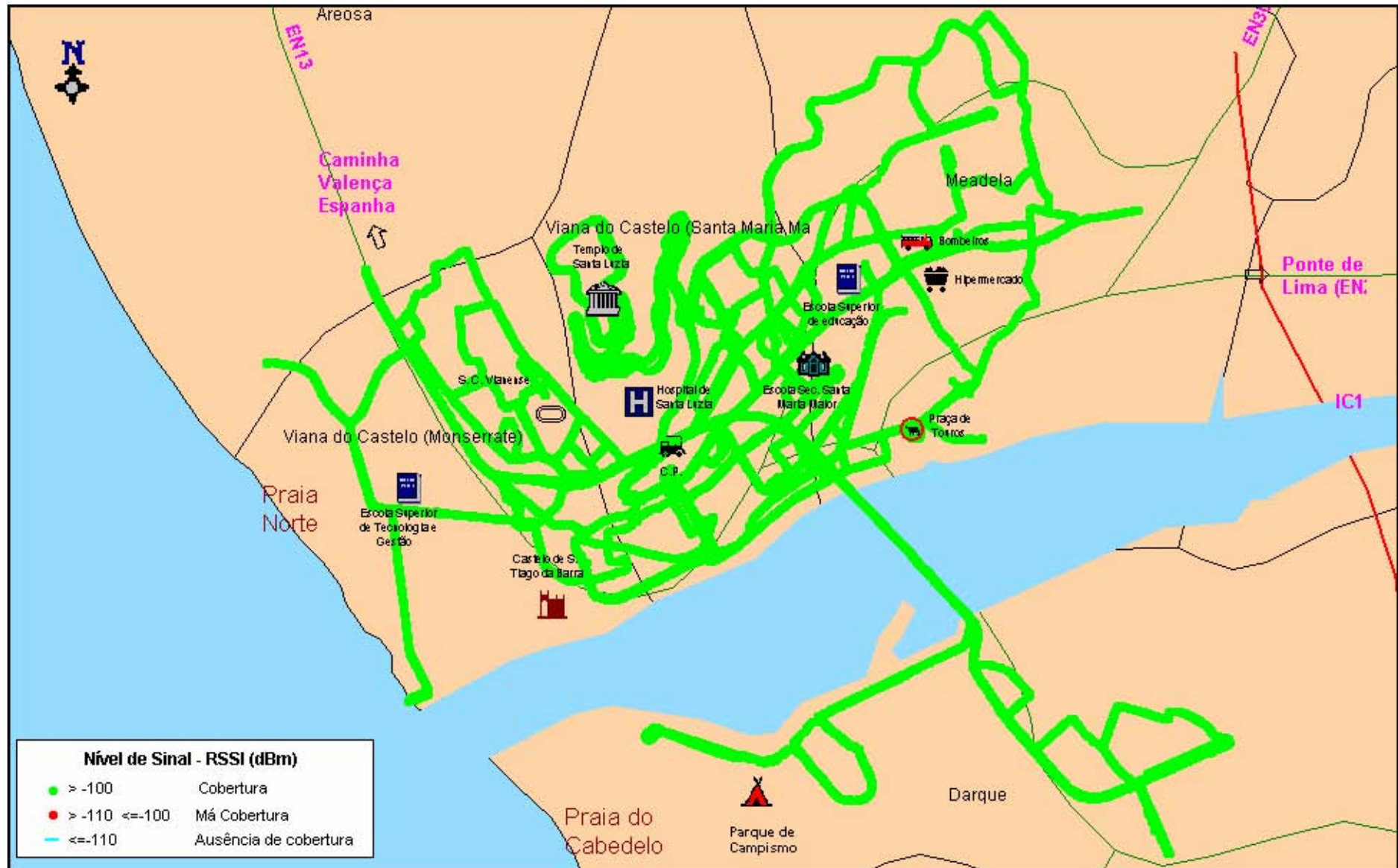
VIANA DO CASTELO

OPTIMUS - PSTN



VIANA DO CASTELO

VODAFONE - PSTN



VIANA DO CASTELO

TMN - PSTN



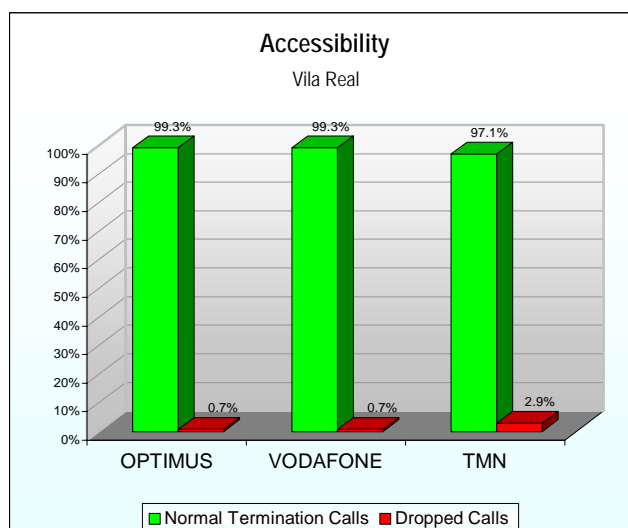
1.17 VILA REAL

Measurement Sessions on:

- 23 September 2005 between 9h34 and 12h37 and between 14h04 and 17h10

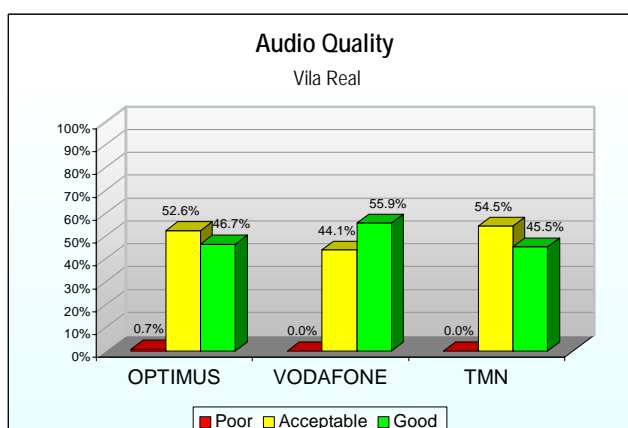
1.17.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	136 100%	136 100%	136 100%
Routed Calls	Total	136 100.0%	135 99.3%	132 97.1%	
	Abandoned During Conversation	1 0.7%	0 0.0%	0 0.0%	
	Normal Termination Calls	135 99.3%	135 99.3%	132 97.1%	
Non-Routed Calls		0 0.0%	1 0.7%	4 2.9%	
Dropped Calls	Total	1 0.7%	1 0.7%	4 2.9%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	1 0.7%	1 0.7%	1 0.7%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	0 0.0%	0 0.0%	3 2.2%



1.17.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	272 100%	270 100%	264 100%
Audio Quality (MOS)	Poor	2 0.7%	0 0.0%	0 0.0%	
	Acceptable	143 52.6%	119 44.1%	144 54.5%	
	Good	127 46.7%	151 55.9%	120 45.5%	

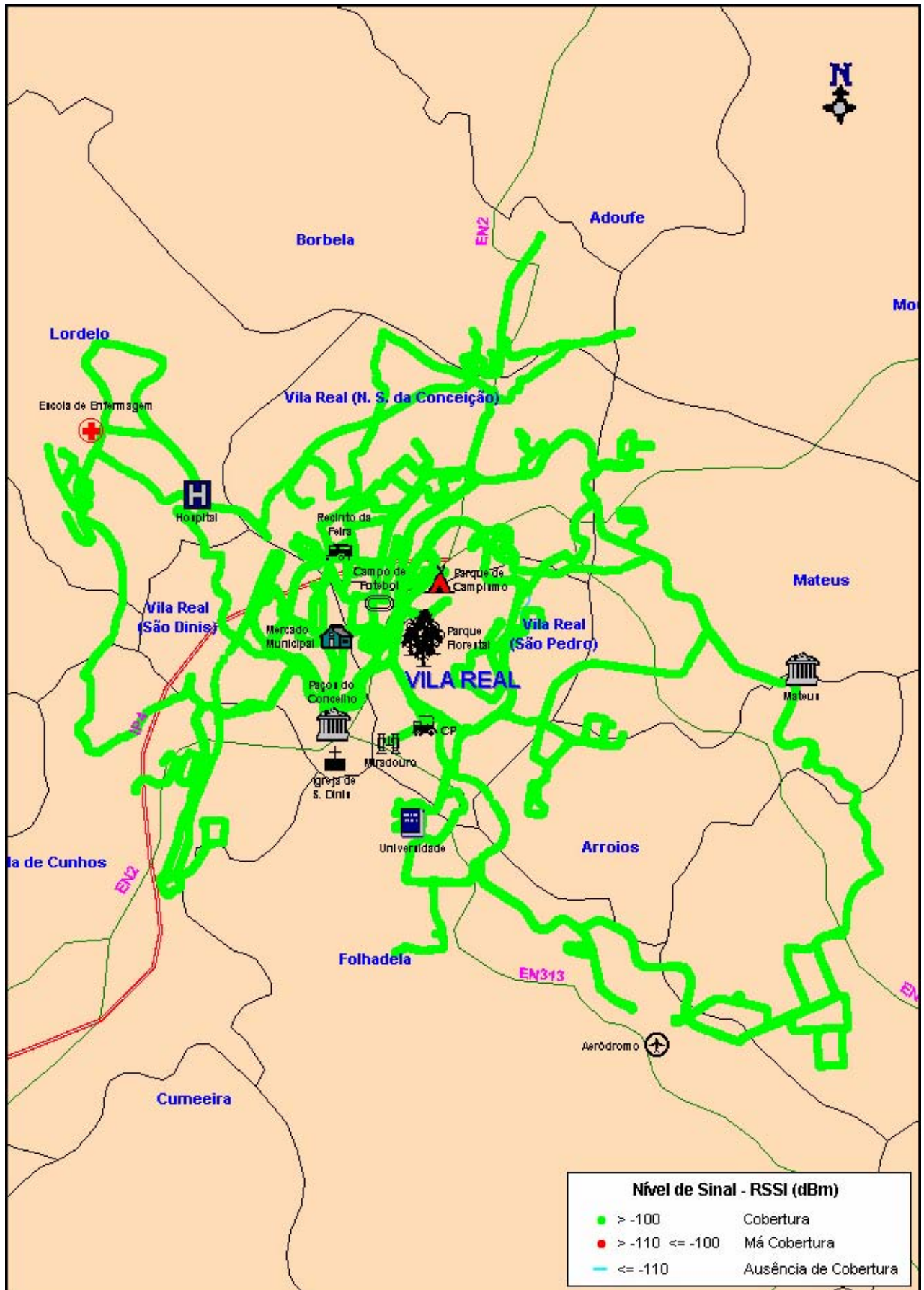


1.17.3 COVERAGE

(Following Pages)

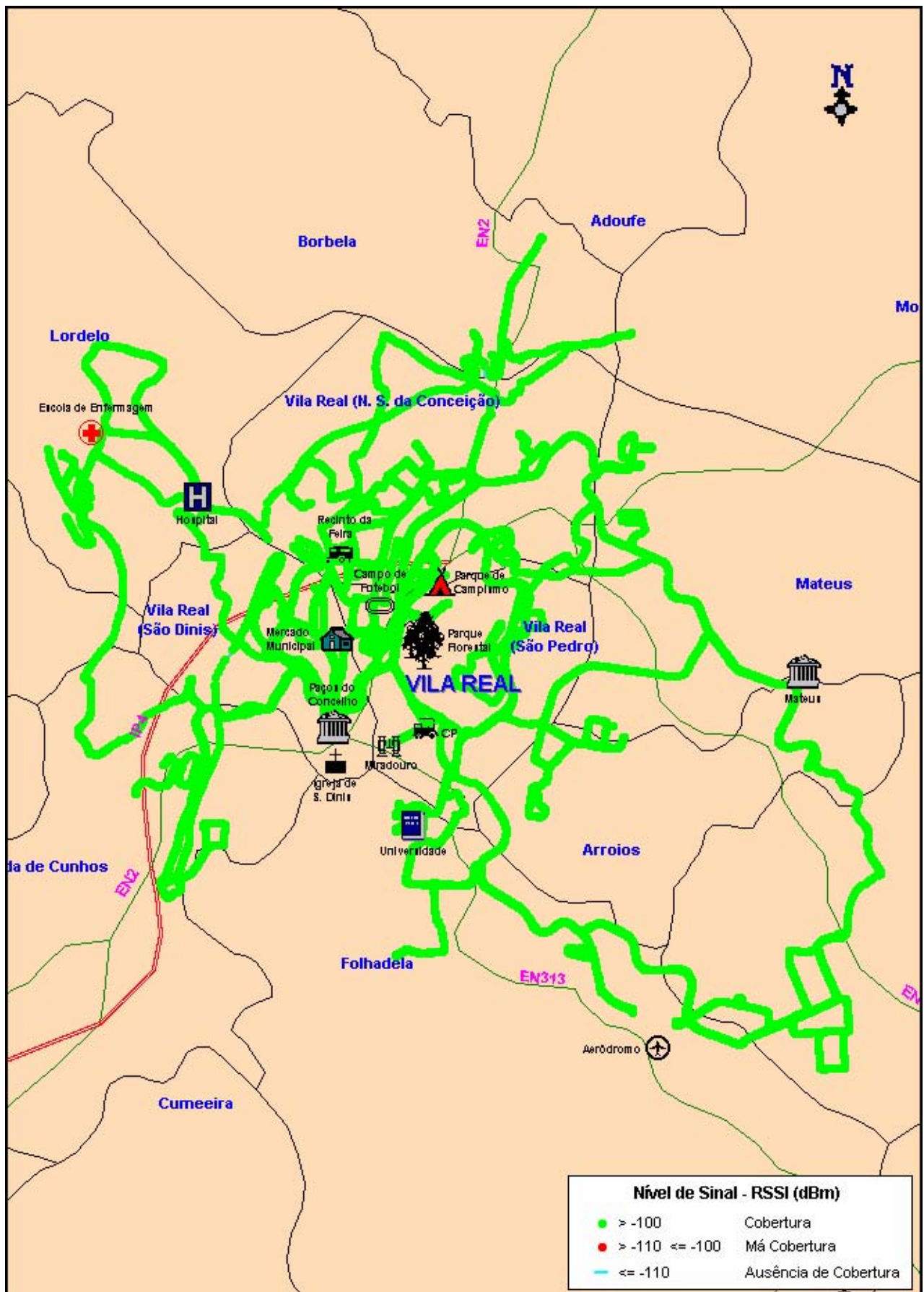
VILA REAL

OPTIMUS - PSTN



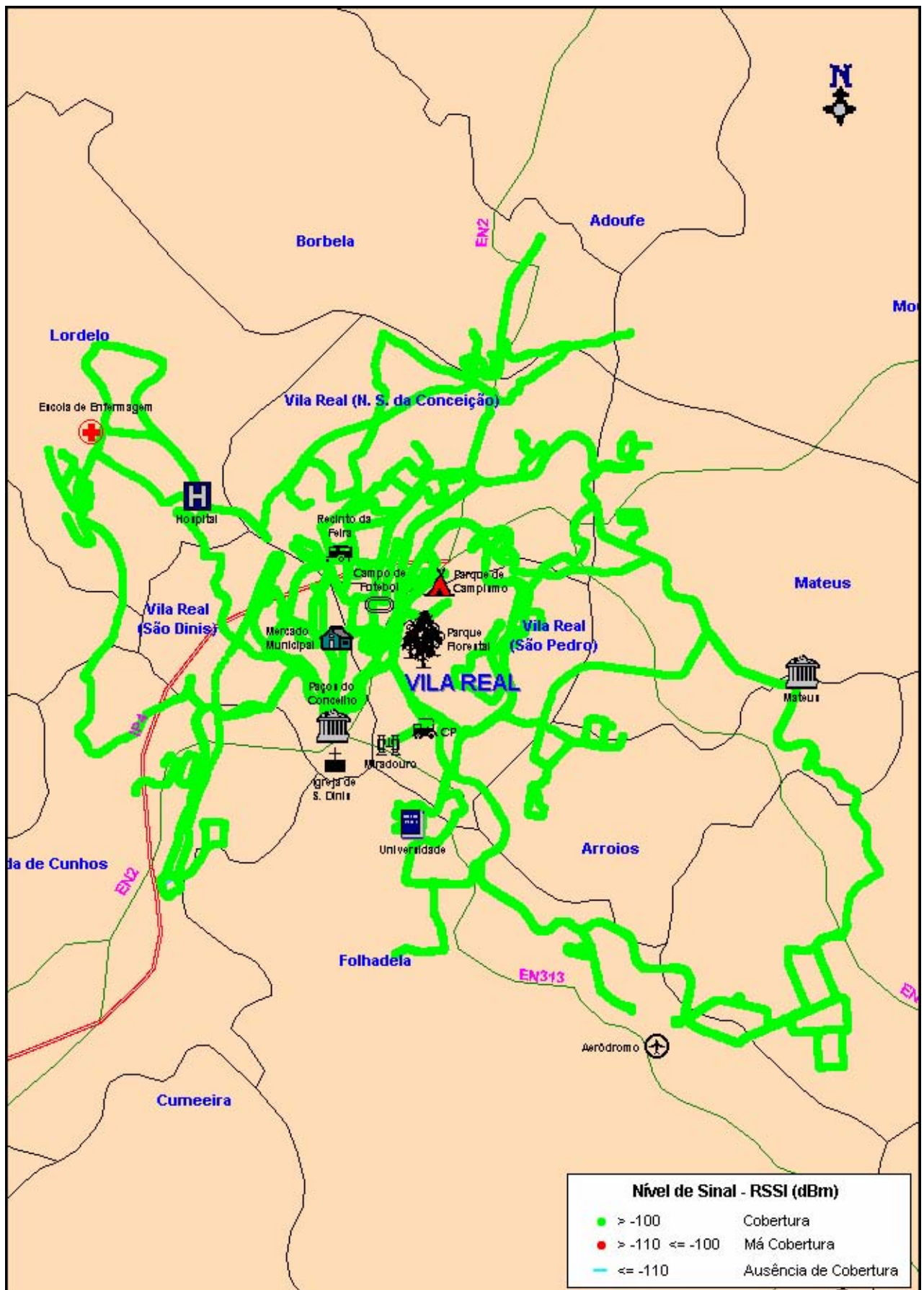
VILA REAL

VODAFONE - PSTN



VILA REAL

TMN - PSTN



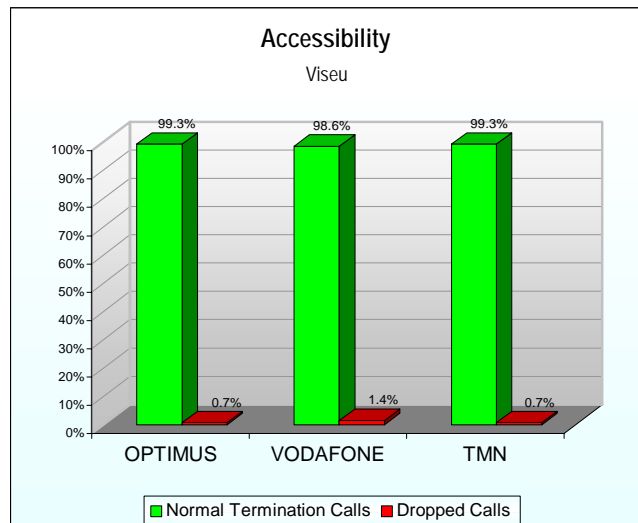
1.18 VISEU

Measurement Sessions on:

- 29 September 2005 between 9h49 and 12h58 and between 14h08 and 17h15

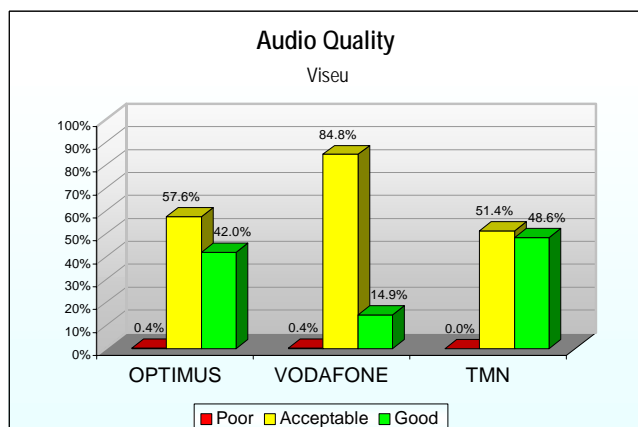
1.18.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	139	139	139
			100%	100%	100%
Routed Calls	Total	138	138	138	
	Abandoned During Conversation	0	1	0	
	Normal Termination Calls	138	137	138	
			99.3%	99.3%	99.3%
Non-Routed Calls		1	1	1	
			0.7%	0.7%	0.7%
Dropped Calls	Total	1	2	1	
	Call Ending Causes	No Service	0	0	0
		Congestion	1	2	0
		Radio Link Failure	0	0	0
		Other	0	0	1
			0.0%	0.0%	0.0%
	0.7%	1.4%	0.7%		



1.18.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	276	276	276
			100%	100%	100%
Audio Quality (MOS)	Poor	1	1	0	
	Acceptable	159	234	142	
	Good	116	41	134	
			0.4%	0.4%	0.0%
			57.6%	84.8%	51.4%
			42.0%	14.9%	48.6%

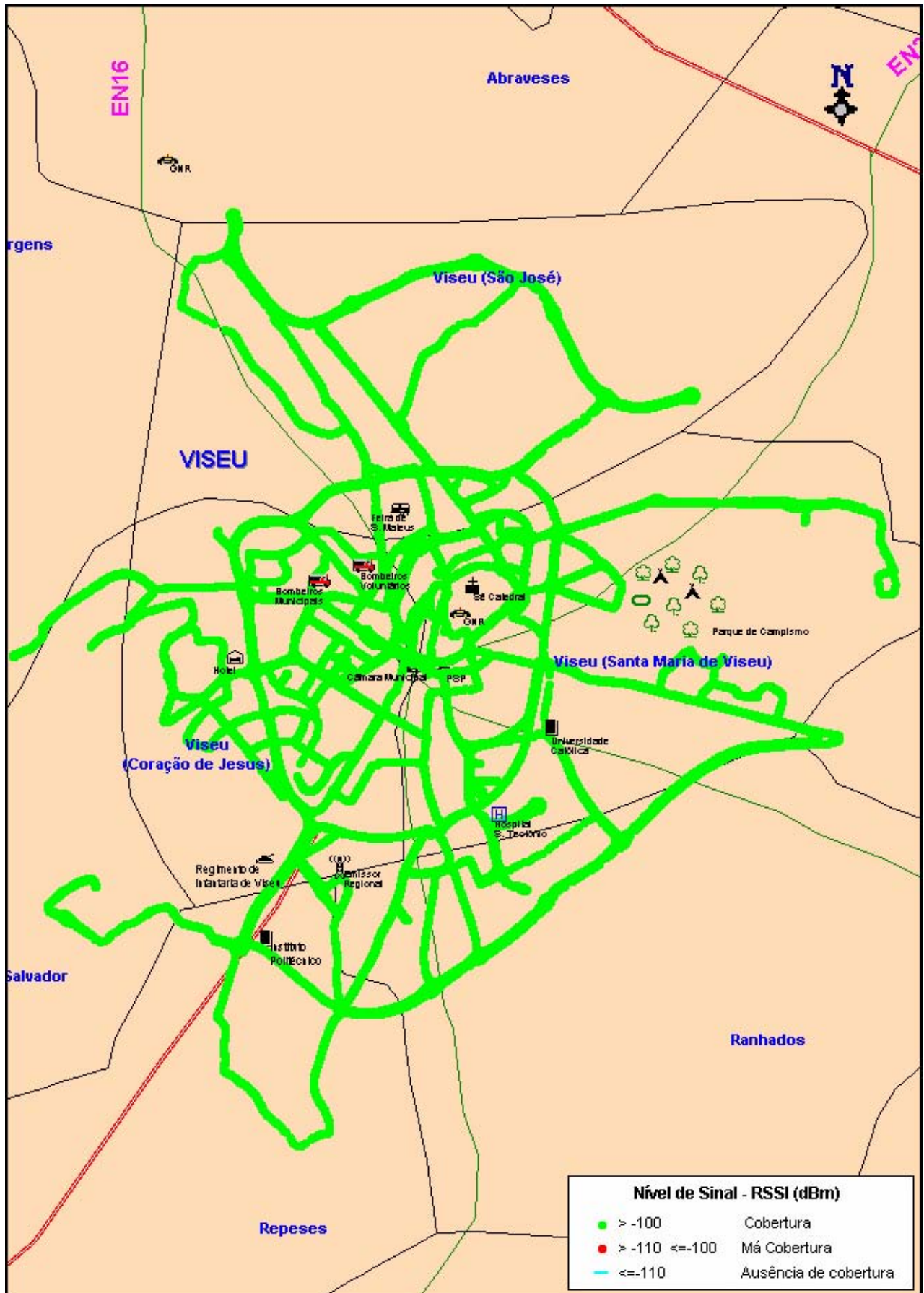


1.18.3 COVERAGE

(Following Pages)

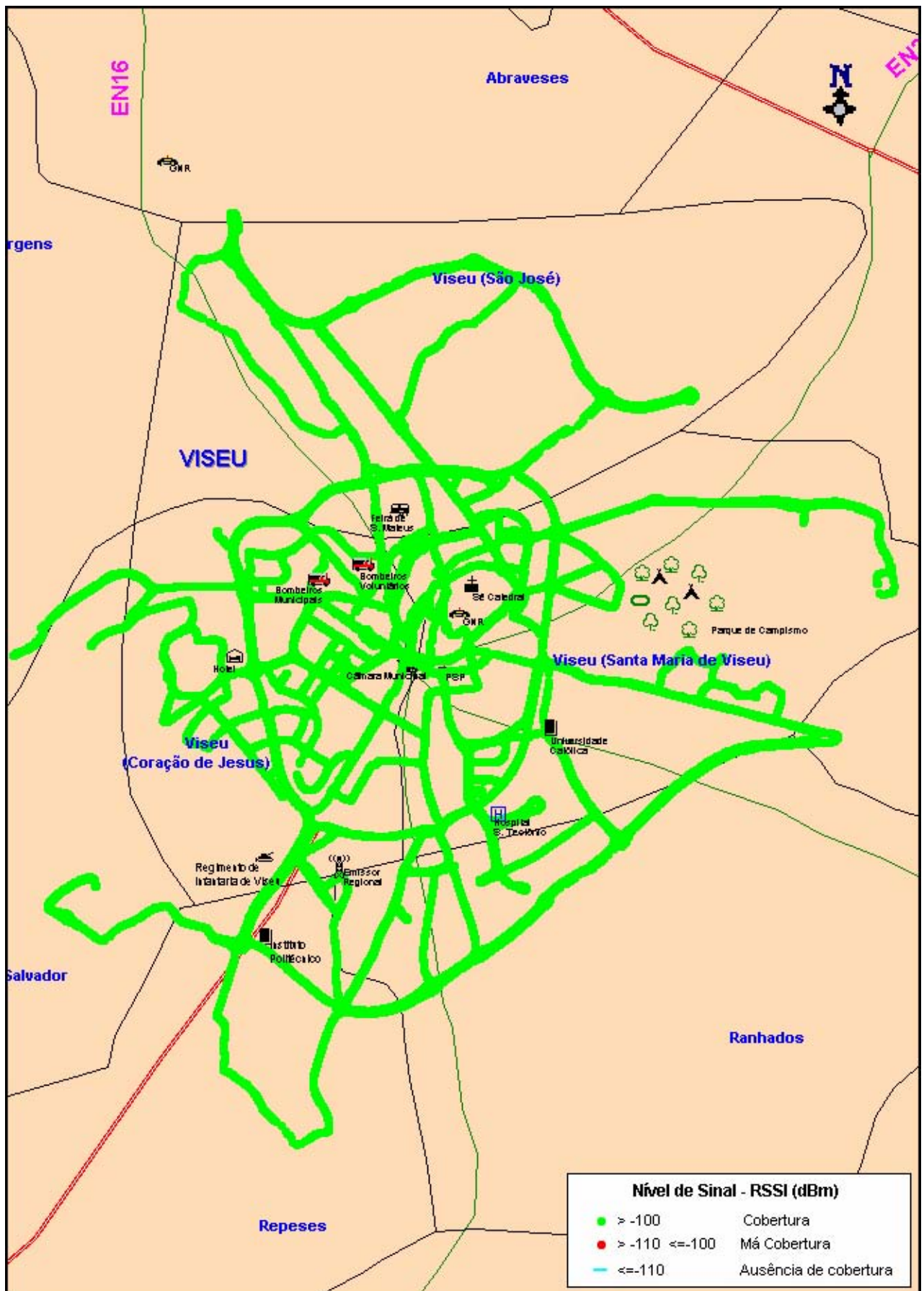
VISEU

OPTIMUS - PSTN



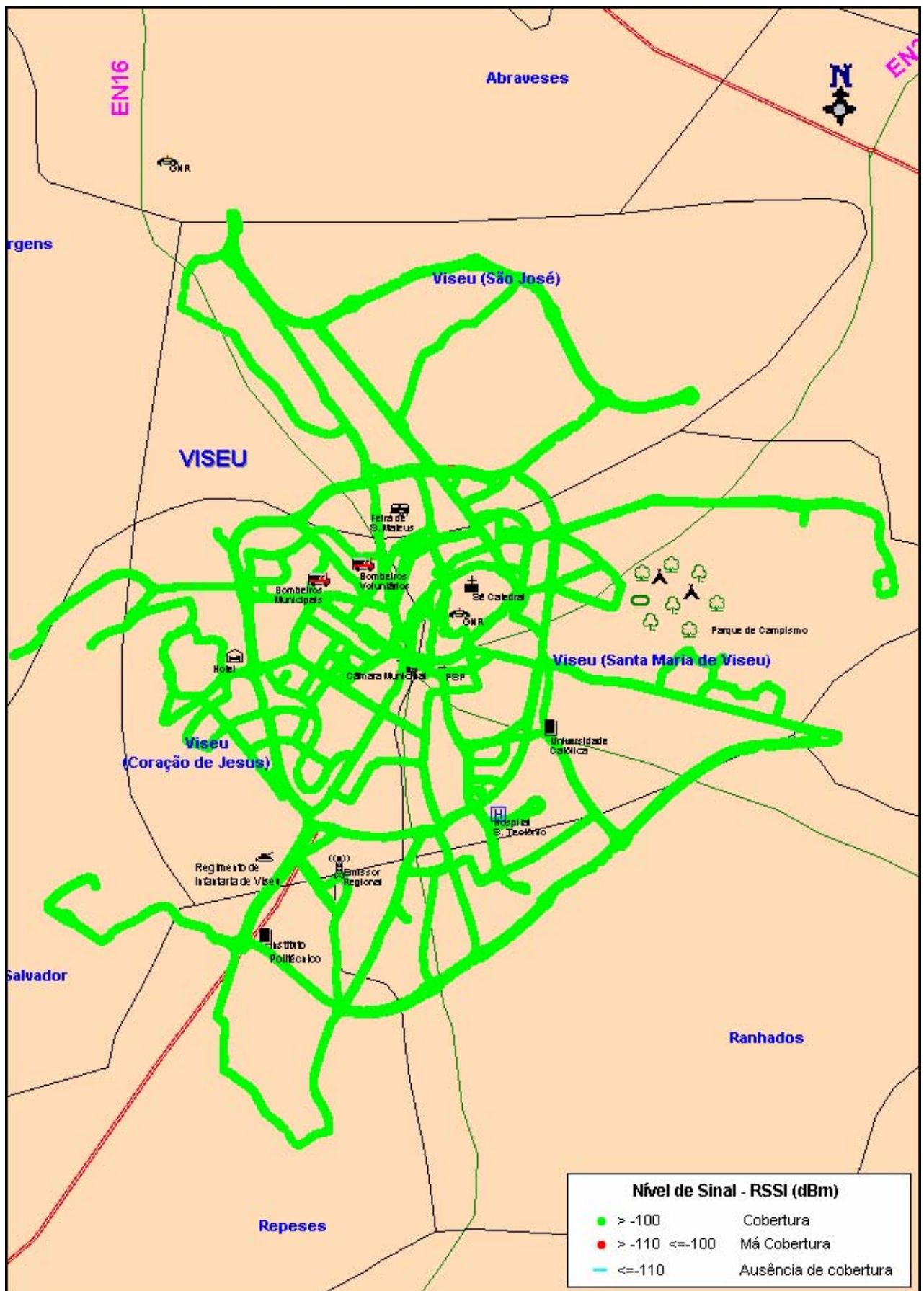
VISEU

VODAFONE - PSTN



VISEU

TMN - PSTN



2 ROAD AXELS

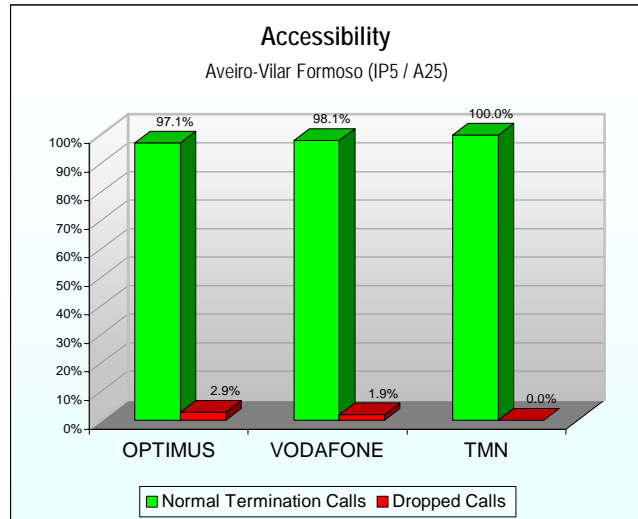
2.1 AVEIRO-VILAR FORMOSO (IP5 / A25)

Measurement Sessions on:

- 27 September 2005 between 9h18 and 11h44
- 28 September 2005 between 13h55 and 16h15

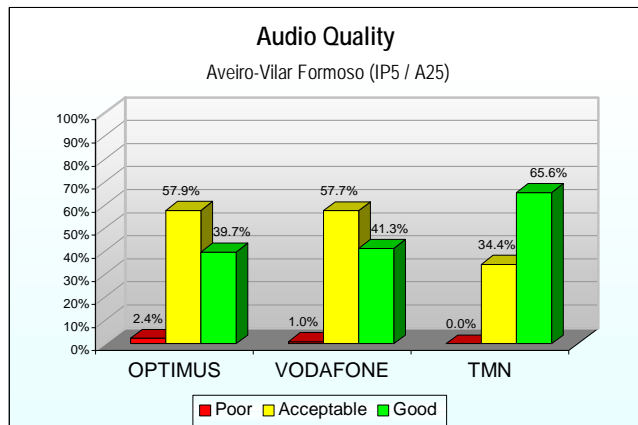
2.1.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN	
		Total	105 100%	105 100%	106 100%	
Routed Calls	Total		105 100.0%	104 99.0%	106 100.0%	
	Abandoned During Conversation		3 2.9%	1 1.0%	0 0.0%	
	Normal Termination Calls		102 97.1%	103 98.1%	106 100.0%	
Non-Routed Calls			0 0.0%	1 1.0%	0 0.0%	
Dropped Calls	Total		3 2.9%	2 1.9%	0 0.0%	
	Call Ending Causes	No Service		0 0.0%	0 0.0%	0 0.0%
		Congestion		0 0.0%	1 1.0%	0 0.0%
		Radio Link Failure		3 2.9%	1 1.0%	0 0.0%
		Other		0 0.0%	0 0.0%	0 0.0%
				0 0.0%	0 0.0%	0 0.0%



2.1.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	209 100%	208 100%	212 100%
Audio Quality (MOS)	Poor		5 2.4%	2 1.0%	0 0.0%
	Acceptable		121 57.9%	120 57.7%	73 34.4%
	Good		83 39.7%	86 41.3%	139 65.6%

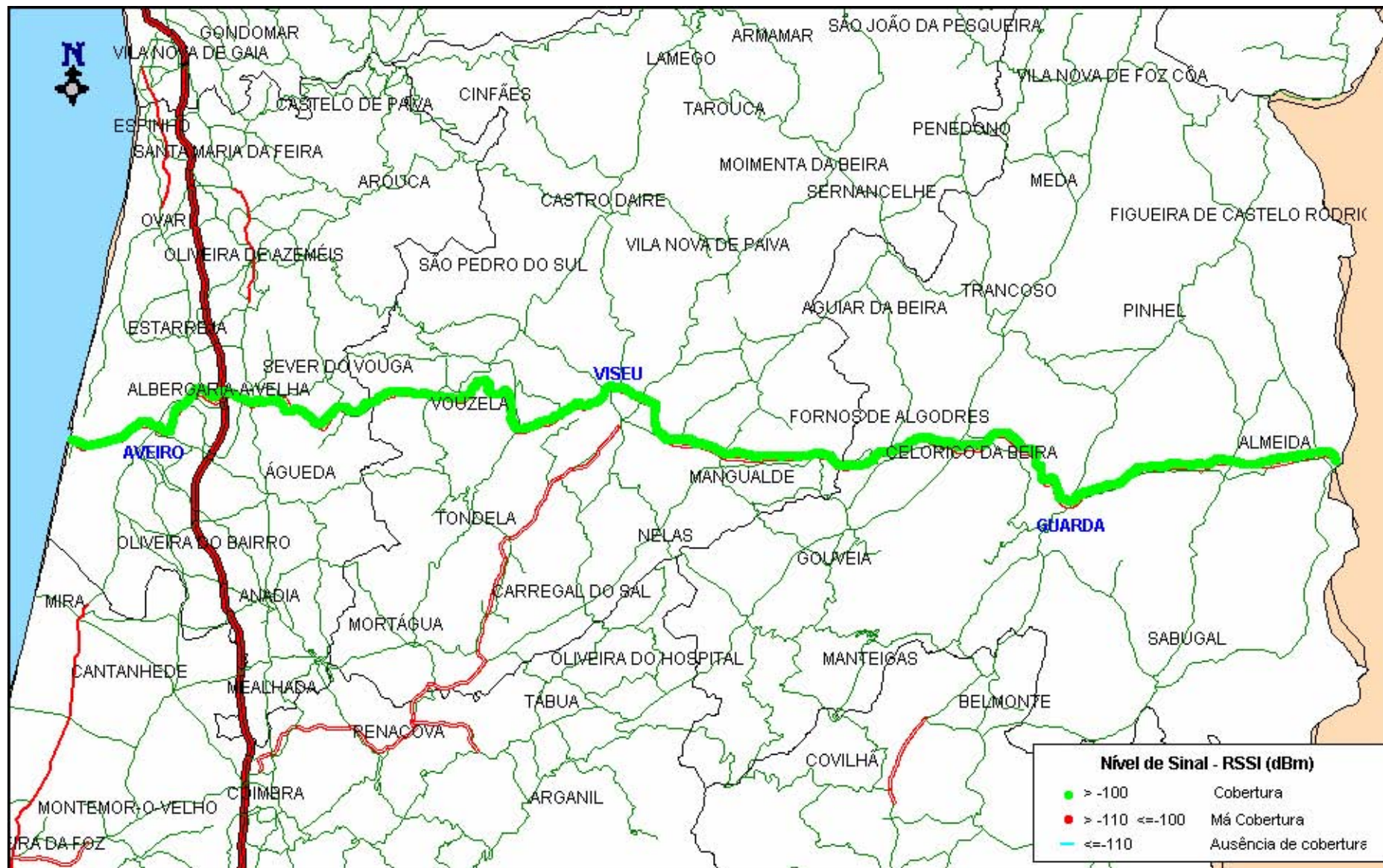


2.1.3 COVERAGE

(Following Pages)

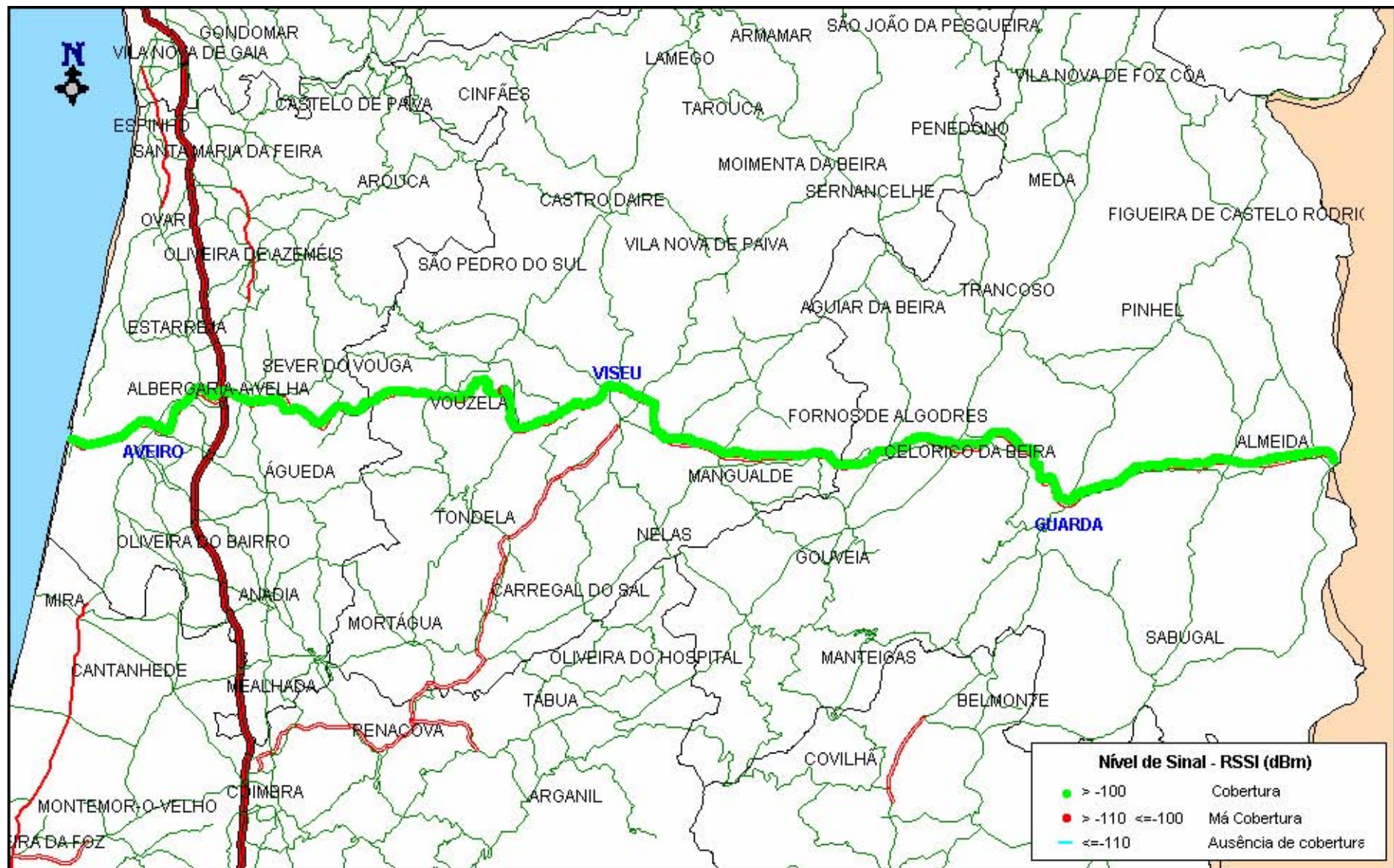
AVEIRO-VILAR FORMOSO (IP5 / A25)

OPTIMUS - PSTN



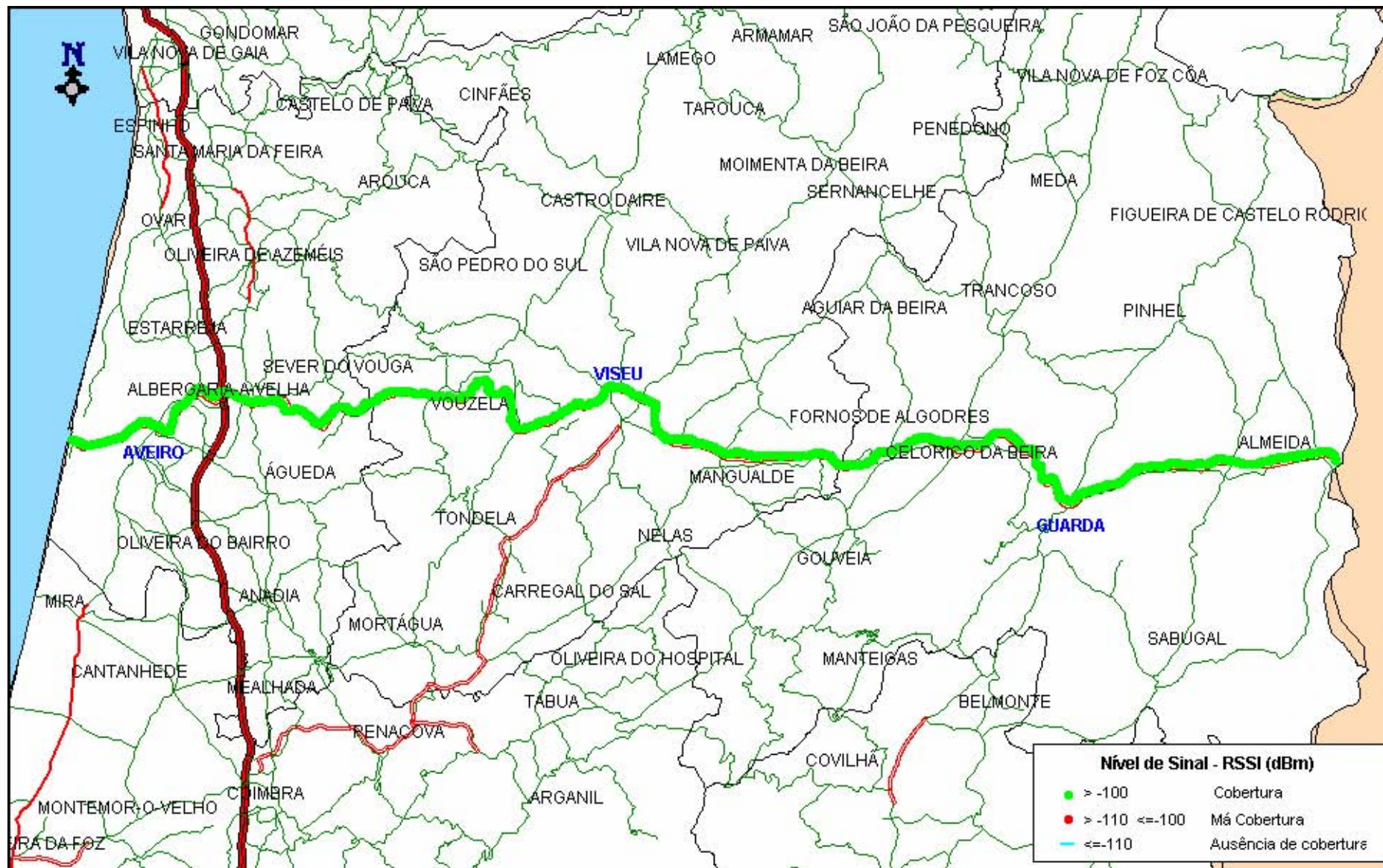
AVEIRO-VILAR FORMOSO (IP5 / A25)

VODAFONE - PSTN



AVEIRO-VILAR FORMOSO (IP5 / A25)

TMN - PSTN



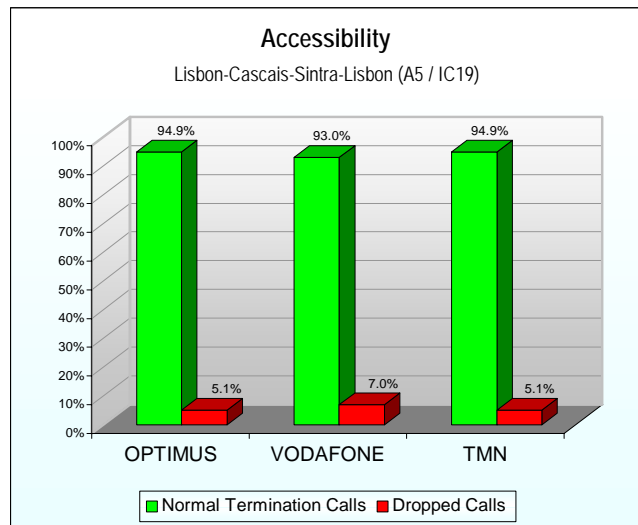
2.2 LISBON-CASCAIS-SINTRA-LISBON (A5 / IC19)

Measurement Sessions on:

- 20 October 2005 between 7h57 and 11h33 and between 16h25 and 20h00

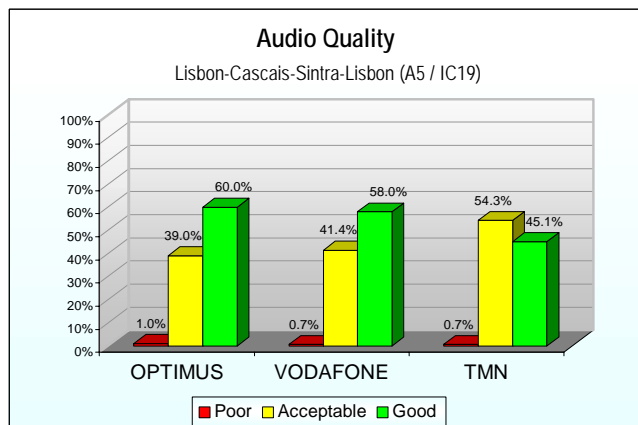
2.2.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	158 100%	157 100%	157 100%
Routed Calls	Total	151 95.6%	150 95.5%	154 98.1%	
	Abandoned During Conversation	1 0.6%	4 2.5%	5 3.2%	
	Normal Termination Calls	150 94.9%	146 93.0%	149 94.9%	
Non-Routed Calls		7 4.4%	7 4.5%	3 1.9%	
Dropped Calls	Total	8 5.1%	11 7.0%	8 5.1%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	7 4.4%	8 5.1%	3 1.9%
		Radio Link Failure	1 0.6%	2 1.3%	0 0.0%
		Other	0 0.0%	1 0.6%	5 3.2%



2.2.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	300 100%	295 100%	304 100%
Audio Quality (MOS)	Poor	3 1.0%	2 0.7%	2 0.7%	
	Acceptable	117 39.0%	122 41.4%	165 54.3%	
	Good	180 60.0%	171 58.0%	137 45.1%	

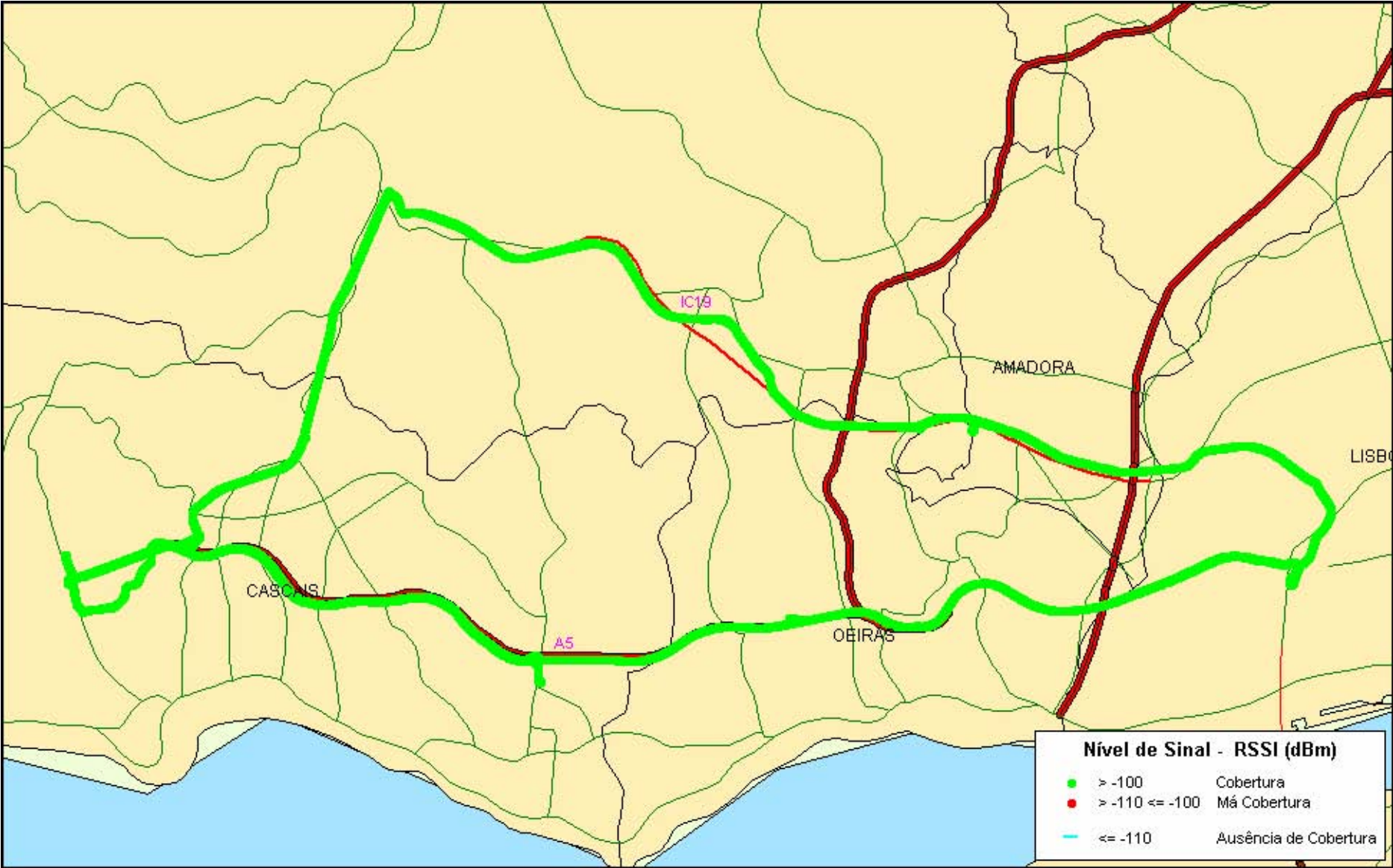


2.2.3 COVERAGE

(Following Pages)

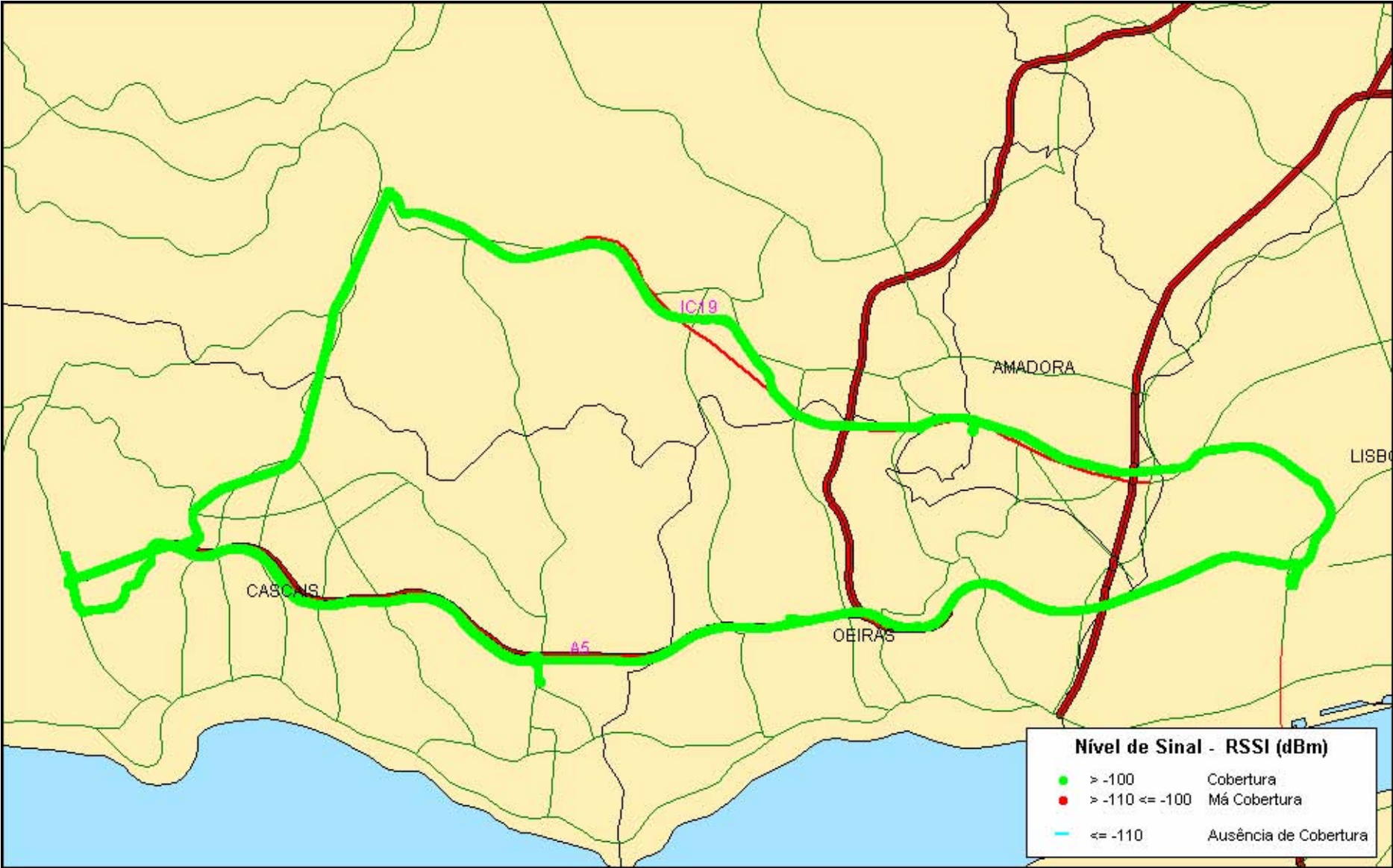
LISBON-CASCAIS-SINTRA-LISBON (A5 / IC19)

OPTIMUS - PSTN



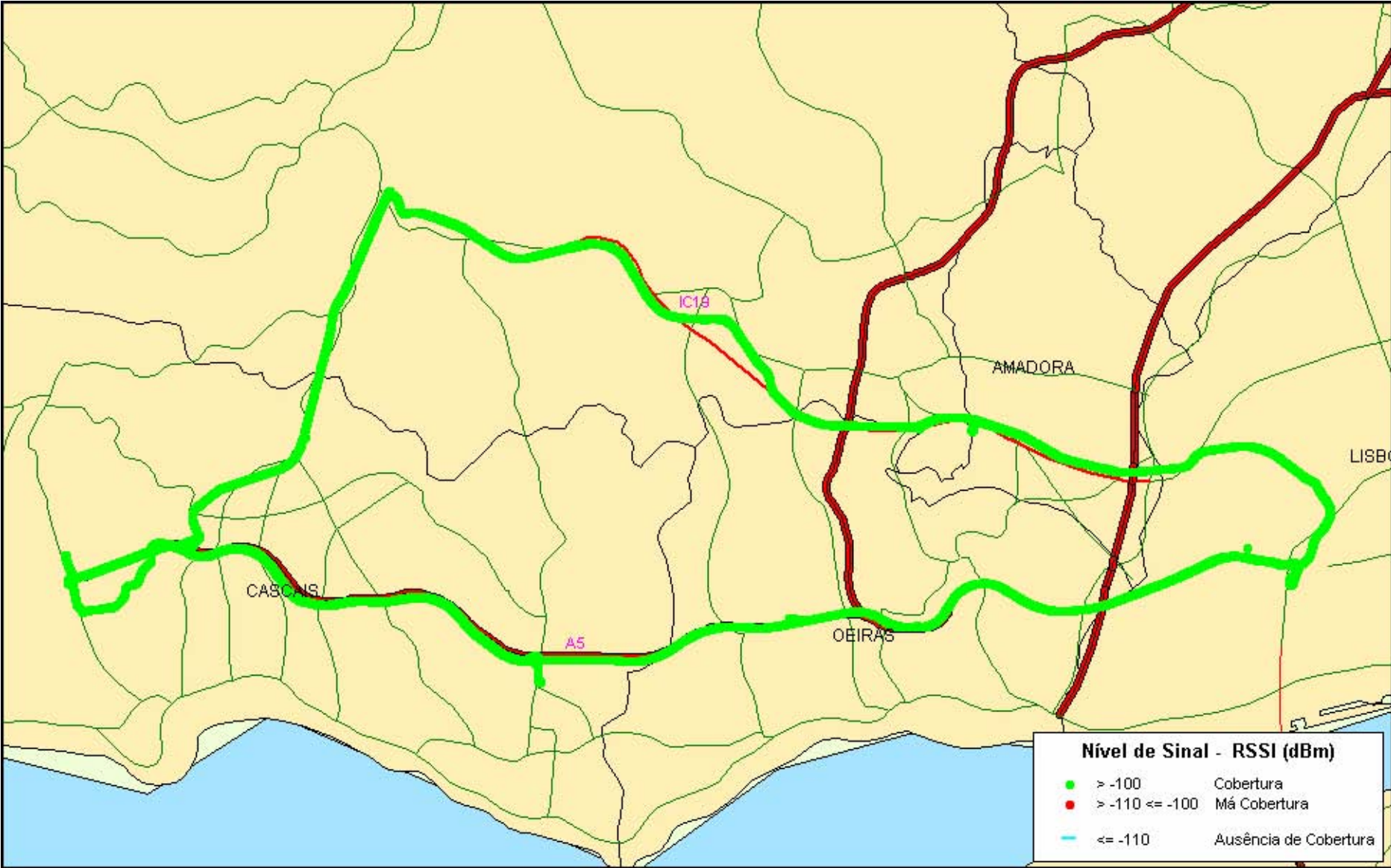
LISBON-CASCAIS-SINTRA-LISBON (A5 / IC19)

VODAFONE - PSTN



LISBON-CASCAIS-SINTRA-LISBON (A5 / IC19)

TMN - PSTN



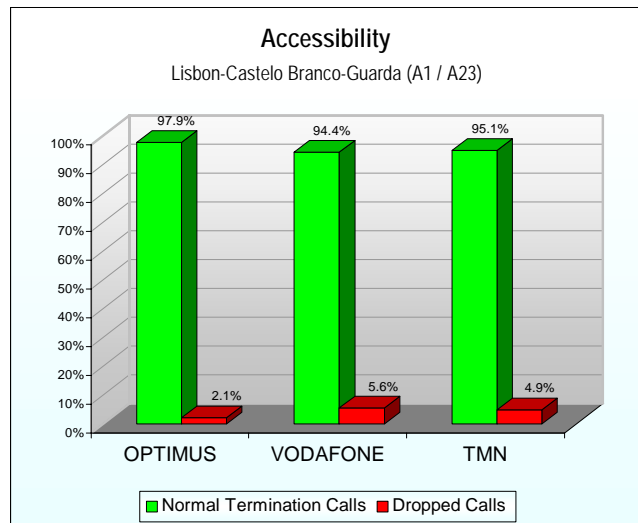
2.3 LISBON-CASTELO BRANCO-GUARDA (A1 / A23)

Measurement Sessions on:

- 26 September 2005 between 13h29 and 16h41
- 27 September 2005 between 8h31 and 11h46

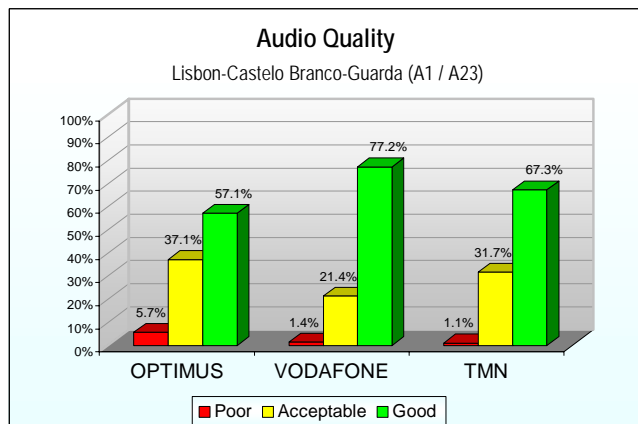
2.3.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN	
		Total	143	143	143	
			100%	100%	100%	
Routed Calls	Total	140	140	140		
	Abandoned During Conversation	0	5	4		
	Normal Termination Calls	140	135	136		
			97.9%	97.9%	97.9%	
			0.0%	3.5%	2.8%	
			97.9%	94.4%	95.1%	
Non-Routed Calls		3	3	3		
			2.1%	2.1%	2.1%	
Dropped Calls	Total	3	8	7		
			2.1%	5.6%	4.9%	
	Call Ending Causes	No Service	0	0	0	
				0.0%	0.0%	0.0%
		Congestion	2	5	3	
				1.4%	3.5%	2.1%
Radio Link Failure		0	3	1		
		0.0%	2.1%	0.7%		
		1	0	3		
		0.7%	0.0%	2.1%		



2.3.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	280	276	278
			100%	100%	100%
Audio Quality (MOS)	Poor	16	4	3	
			5.7%	1.4%	1.1%
	Acceptable	104	59	88	
			37.1%	21.4%	31.7%
		160	213	187	
			57.1%	77.2%	67.3%

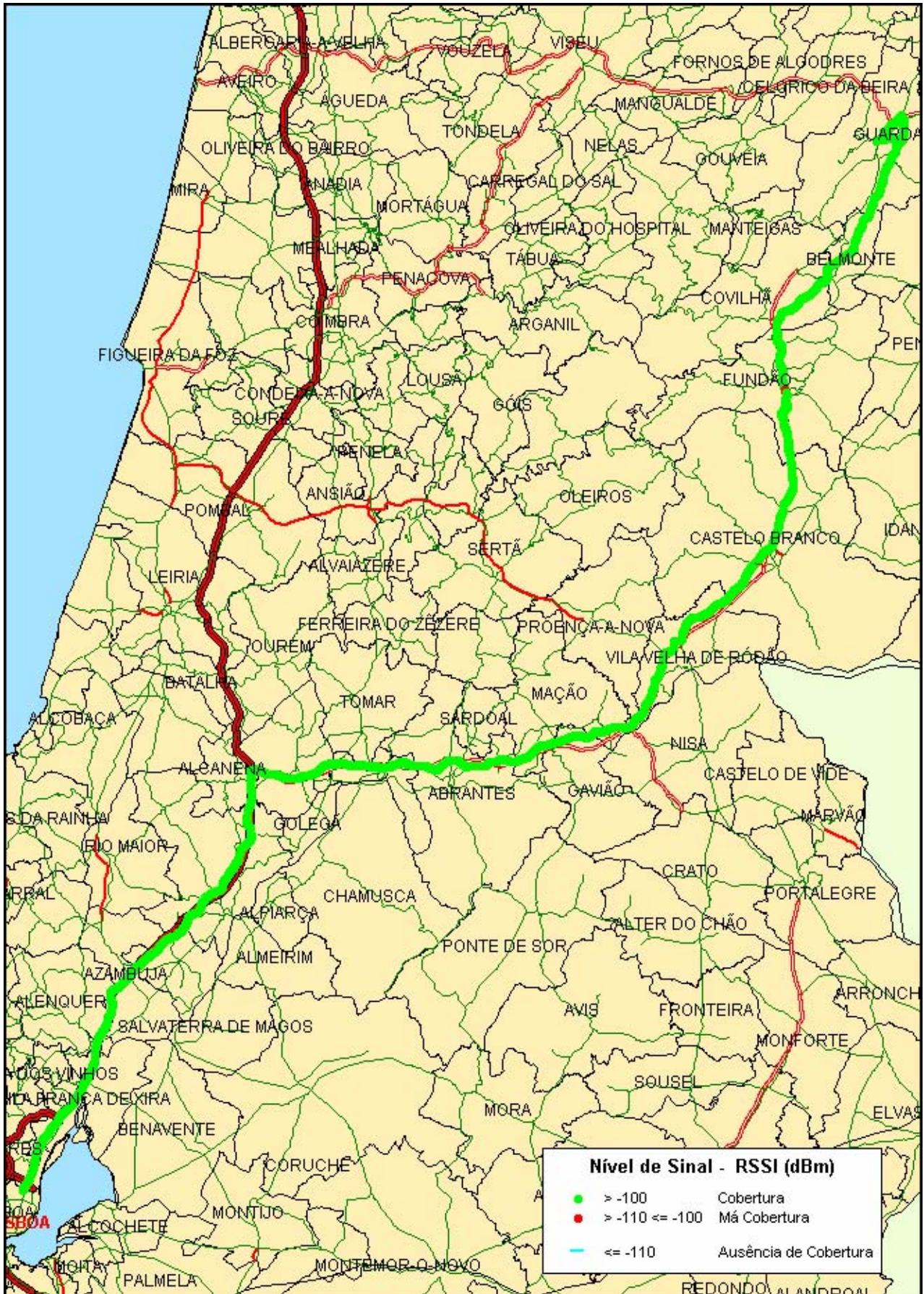


2.3.3 COVERAGE

(Following Pages)

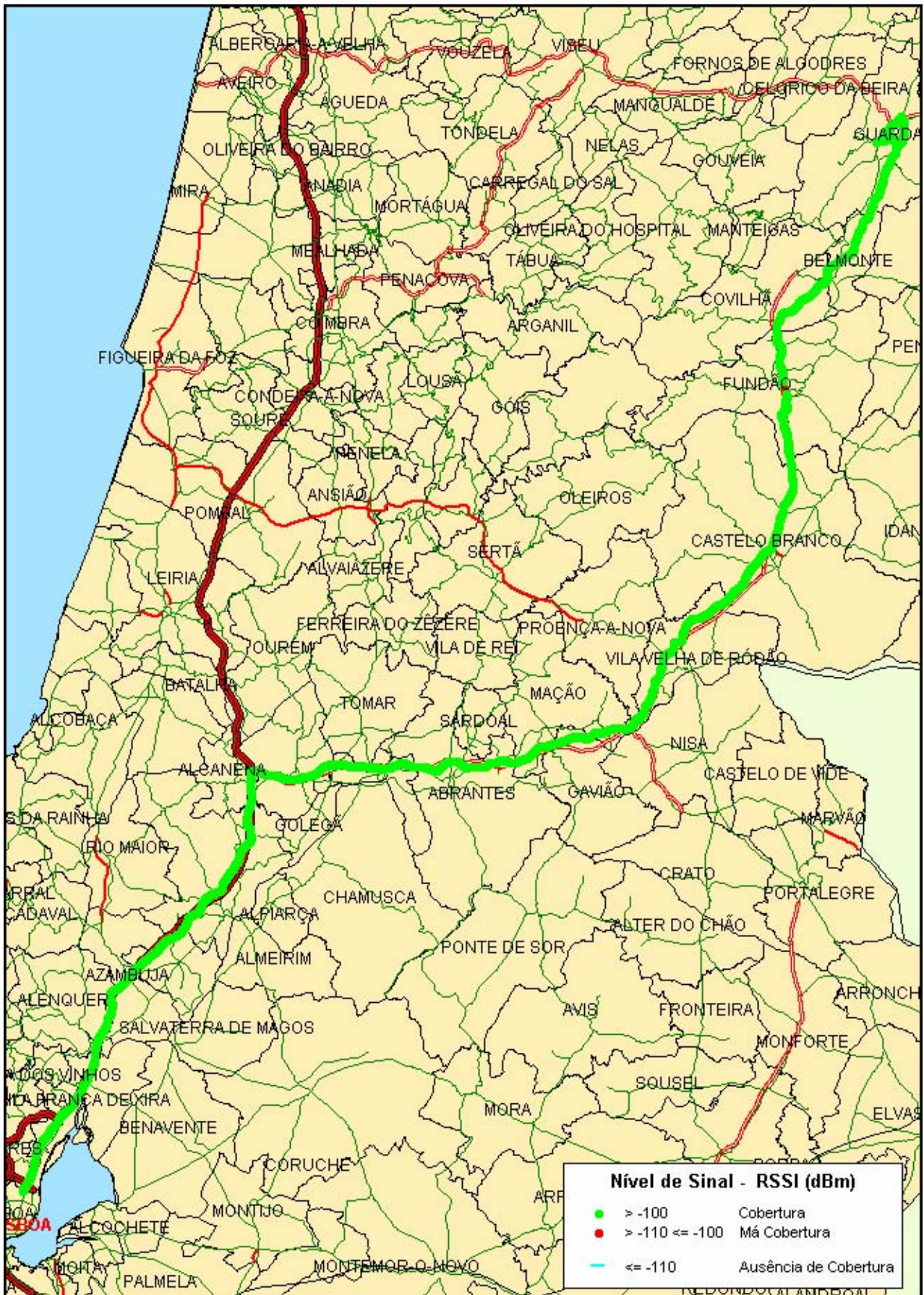
LISBON-CASTELO BRANCO-GUARDA (A1 / A23)

OPTIMUS - PSTN



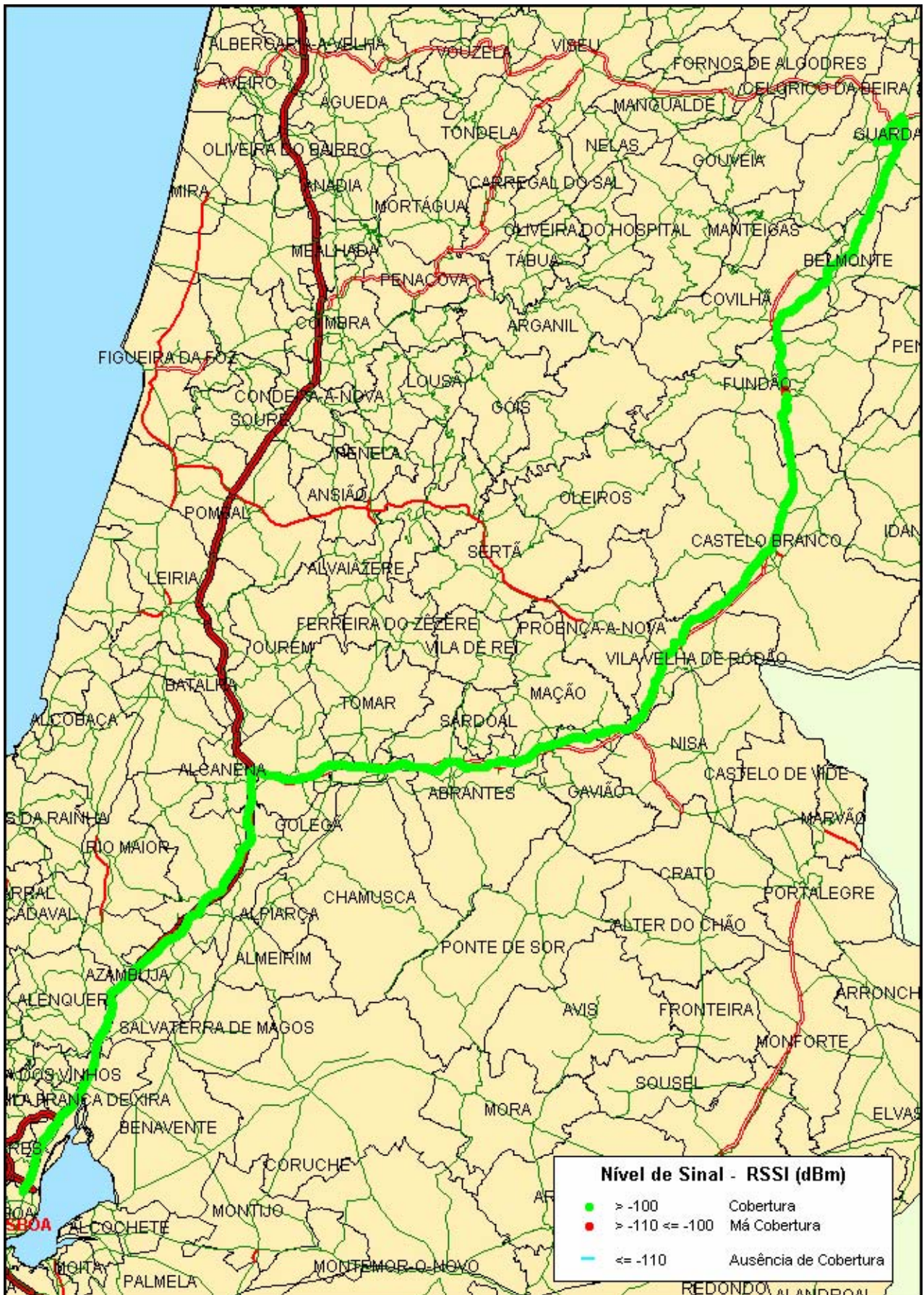
LISBON-CASTELO BRANCO-GUARDA (A1 / A23)

VODAFONE - PSTN



LISBON-CASTELO BRANCO-GUARDA (A1 / A23)

TMN - PSTN



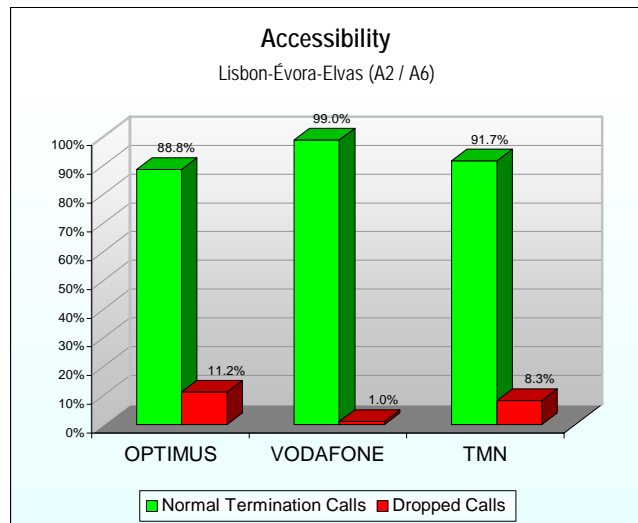
2.4 LISBON-ÉVORA-ELVAS (A2 / A6)

Measurement Sessions on:

- 19 September 2005 between 10h01 and 12h21
- 22 September 2005 between 9h39 and 11h43

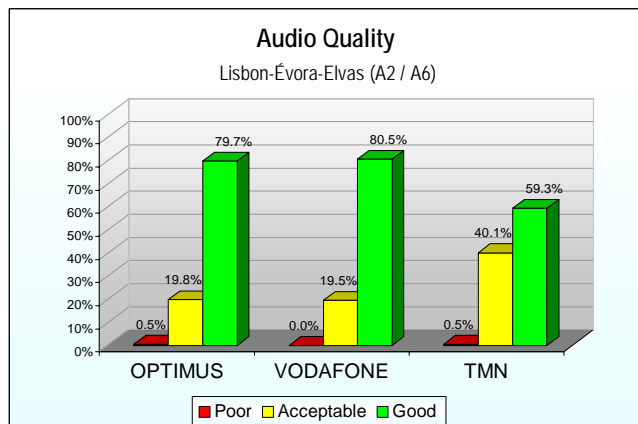
2.4.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	98	96	96
			100%	100%	100%
Routed Calls	Total	92	95	91	
	Abandoned During Conversation	5	0	3	
	Normal Termination Calls	87	95	88	
			93.9%	99.0%	94.8%
			5.1%	0.0%	3.1%
			88.8%	99.0%	91.7%
Non-Routed Calls		6	1	5	
		6.1%	1.0%	5.2%	
Dropped Calls	Total	11	1	8	
	Call Ending Causes	No Service	0	0	0
		Congestion	6	0	5
		Radio Link Failure	0	0	0
		Other	5	1	3
		5.1%	1.0%	3.1%	
11.2%	1.0%	8.3%			



2.4.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	182	190	182
			100%	100%	100%
Audio Quality (MOS)	Poor	1	0	1	
	Acceptable	36	37	73	
	Good	145	153	108	
			0.5%	0.0%	0.5%
			19.8%	19.5%	40.1%
			79.7%	80.5%	59.3%

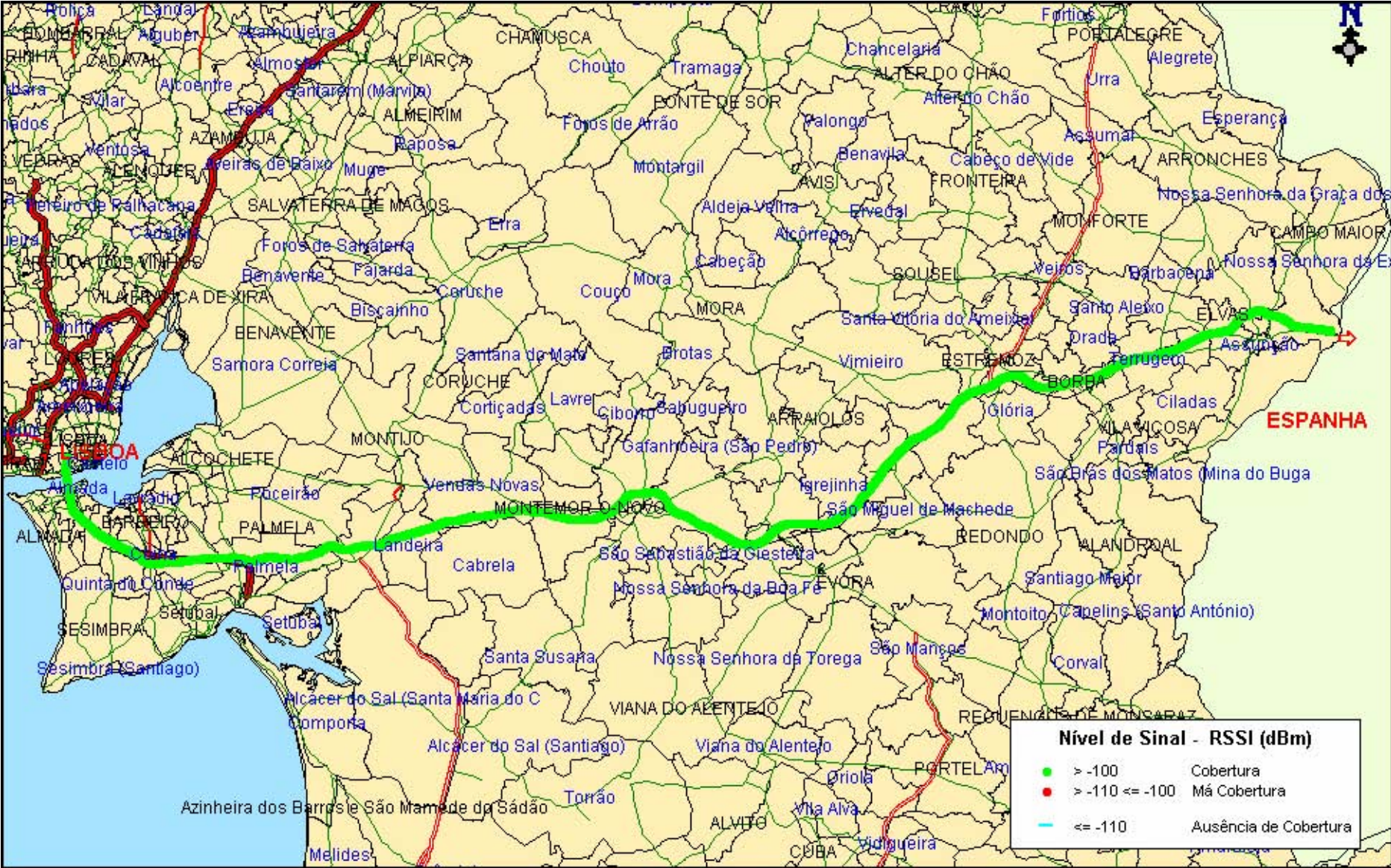


2.4.3 COVERAGE

(Following Pages)

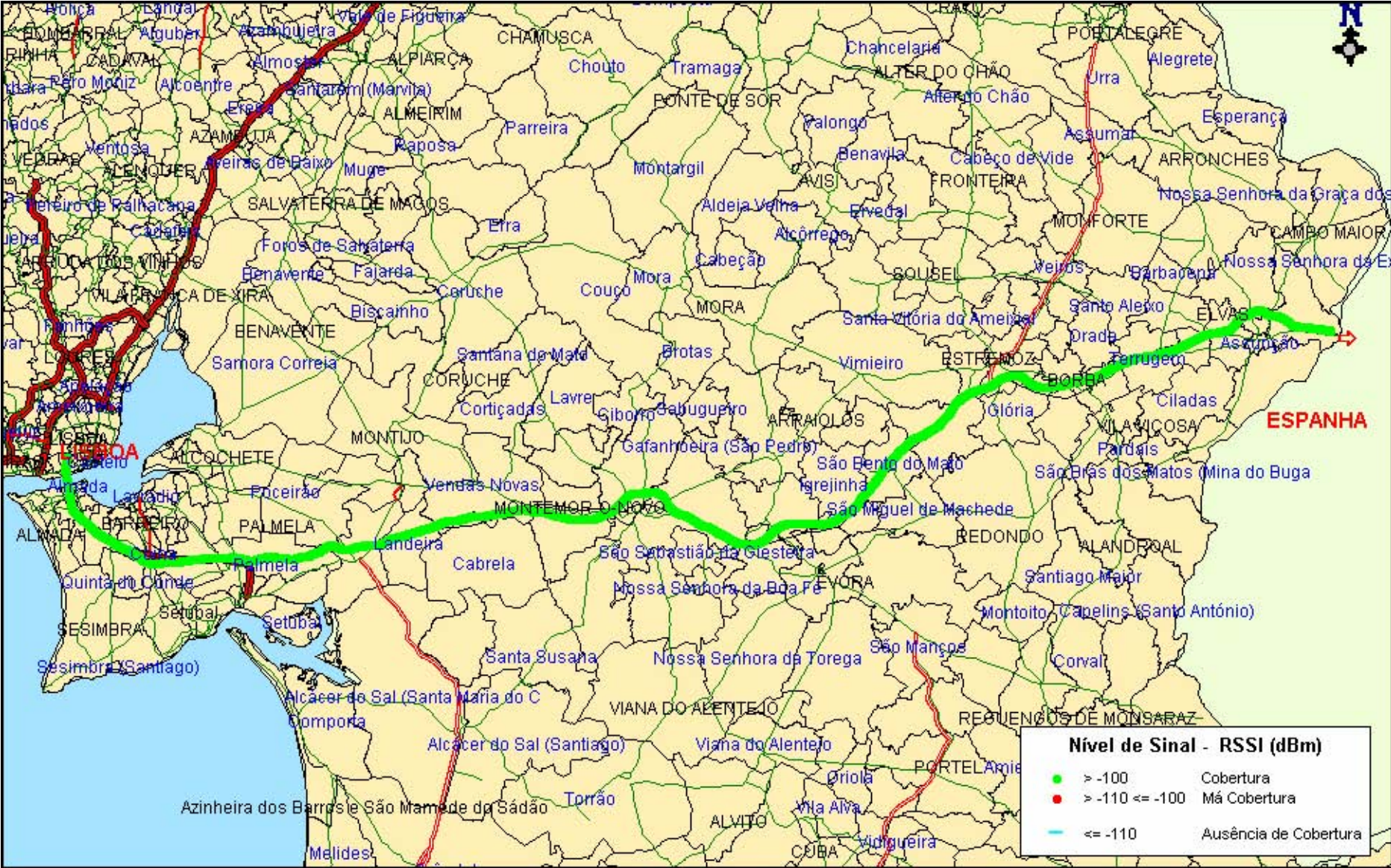
LISBON-ÉVORA-ELVAS (A2 / A6)

OPTIMUS - PSTN



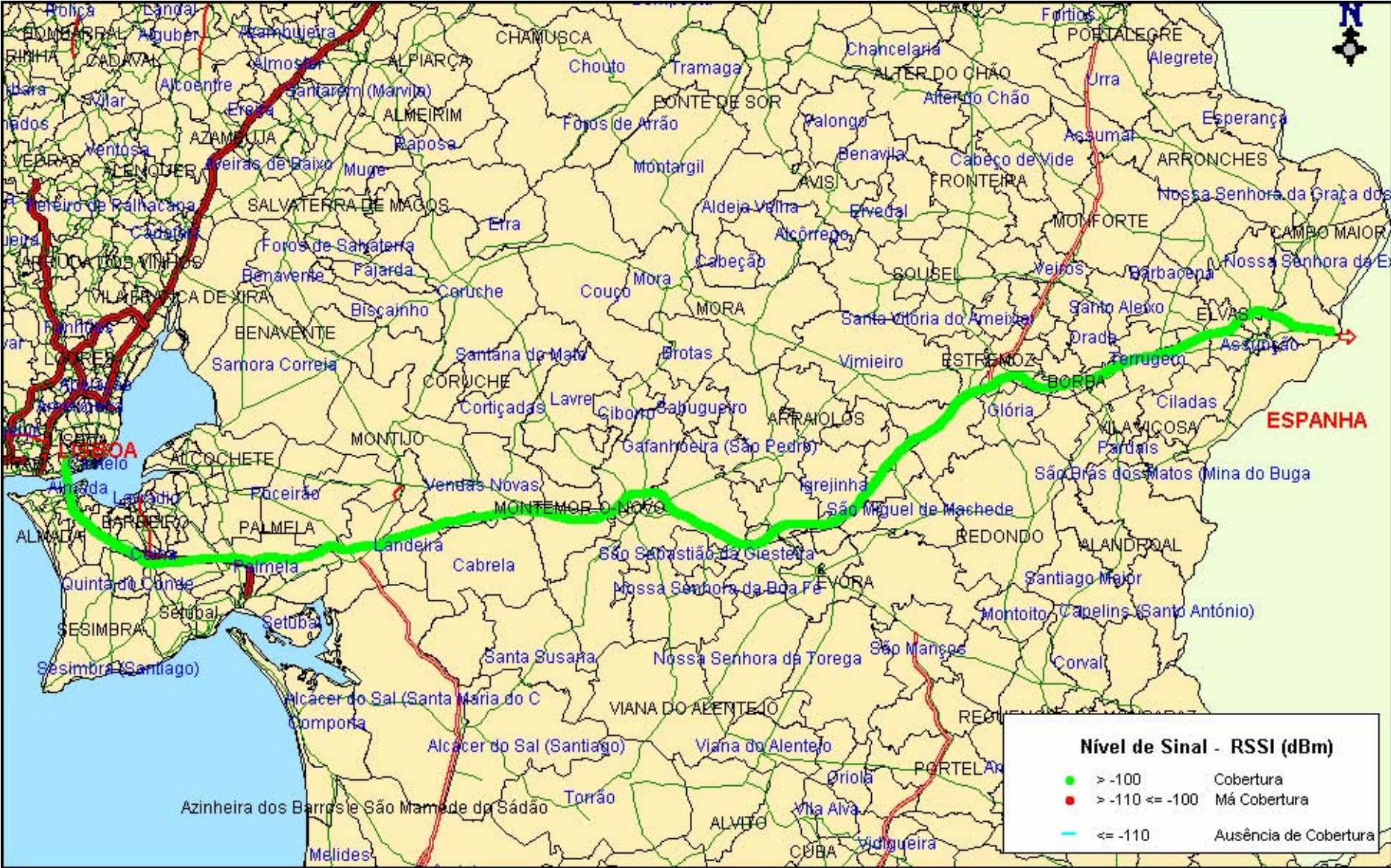
LISBON-ÉVORA-ELVAS (A2 / A6)

VODAFONE - PSTN



LISBON-ÉVORA-ELVAS (A2 / A6)

TMN - PSTN



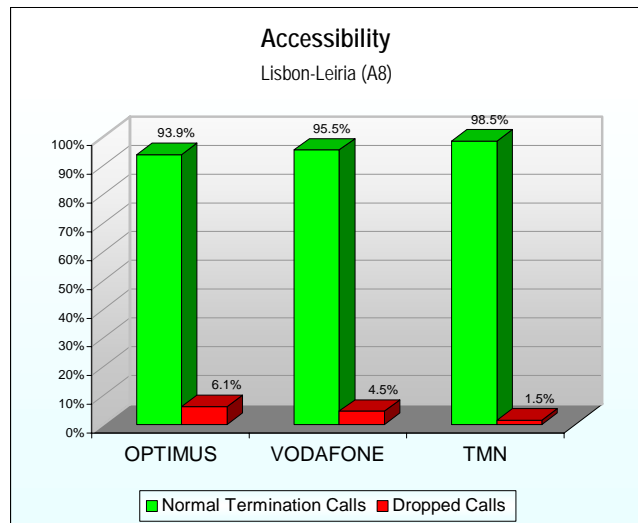
2.5 LISBON-LEIRIA (A8)

Measurement Sessions on:

- 27 September 2005 between 14h10 and 15h44
- 30 September 2005 between 13h39 and 15h06

2.5.1 ACCESSIBILITY

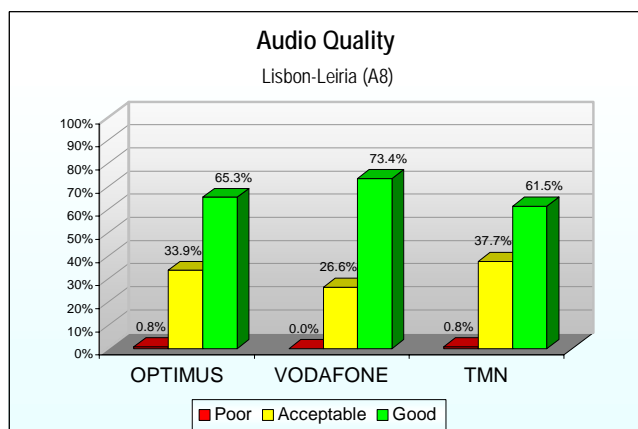
Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	66	66	65
Routed Calls	Total	62	64	65	
	Abandoned During Conversation	0	1	1	
	Normal Termination Calls	62	63	64	
		93.9%	97.0%	100.0%	
Non-Routed Calls		4	2	0	
		6.1%	3.0%	0.0%	
Dropped Calls	Total	4	3	1	
	Call Ending Causes	No Service	0	0	0
		Congestion	1	2	1
		Radio Link Failure	0	0	0
		Other	3	1	0
			4.5%	1.5%	0.0%



2.5.2 AUDIO QUALITY

Lisbon-Leiria (A8)

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	124	128	130
Audio Quality (MOS)	Poor	1	0	1	
	Acceptable	42	34	49	
	Good	81	94	80	
			65.3%	73.4%	61.5%

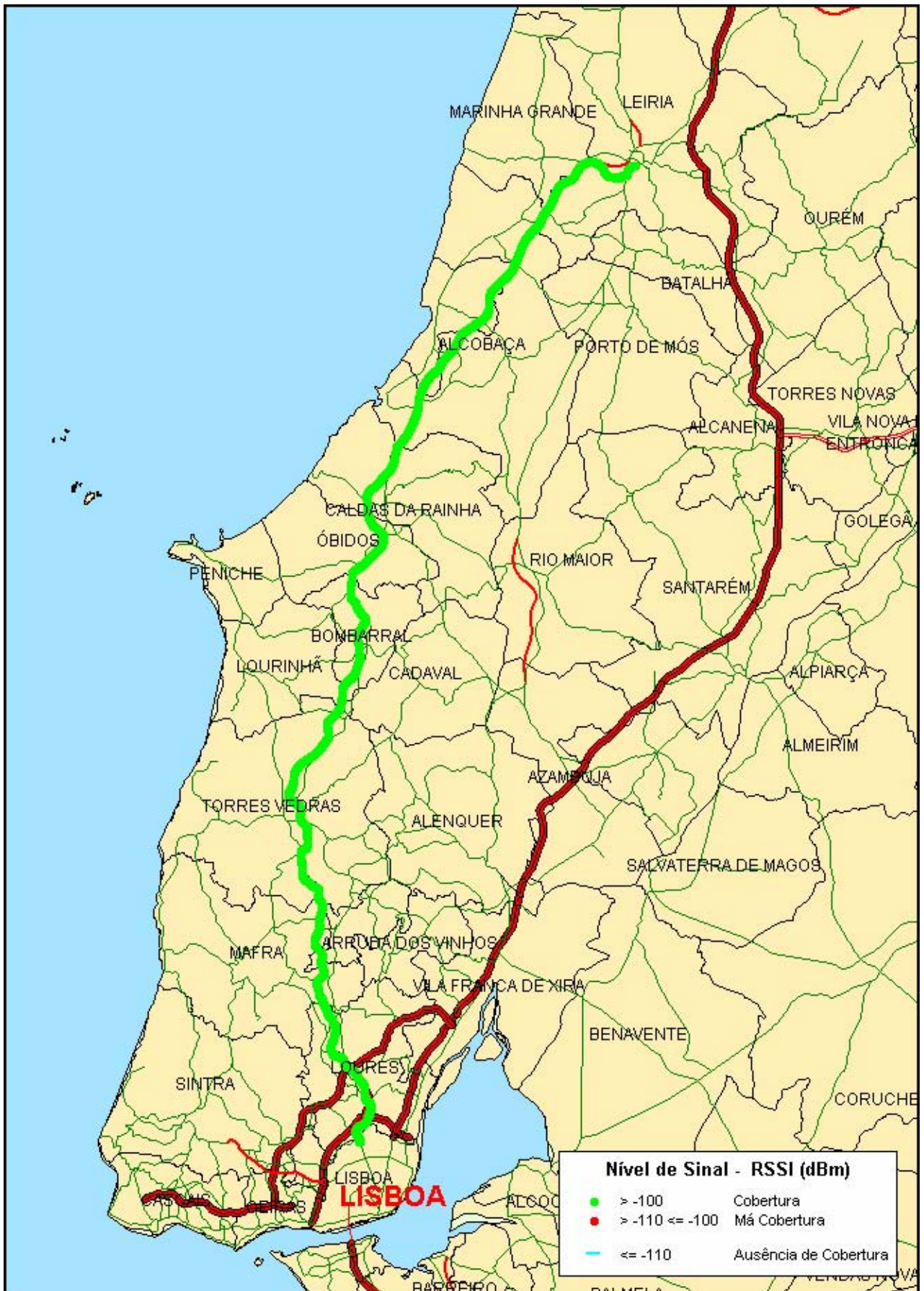


2.5.3 COVERAGE

(Following Pages)

LISBON-LEIRIA (A8)

OPTIMUS - PSTN



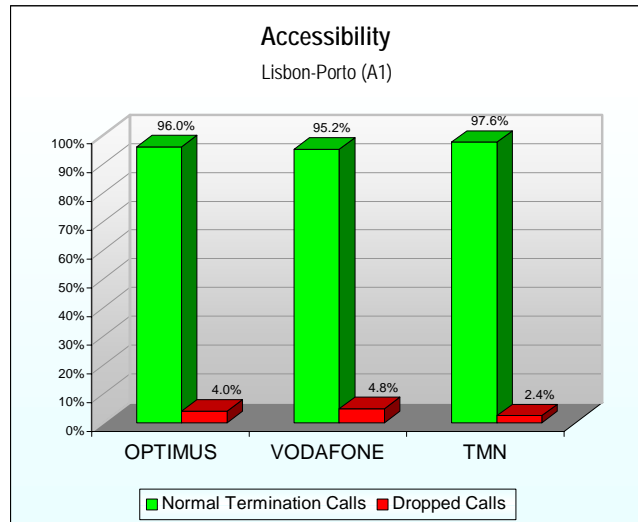
2.6 LISBON-PORTO (A1)

Measurement Sessions on:

- 3 October 2005 between 8h22 and 11h22 and between 14h02 and 16h37

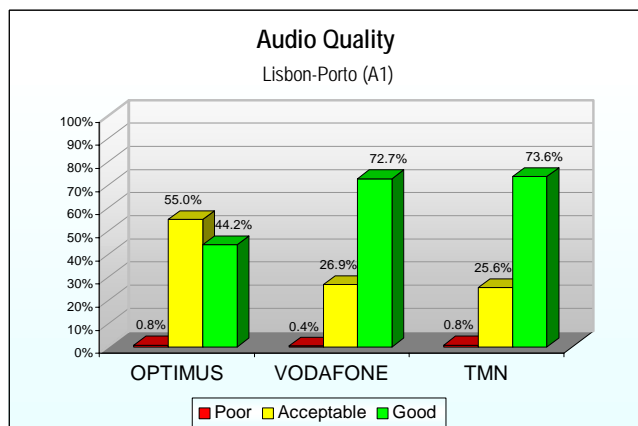
2.6.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	124	124	124
Routed Calls	Total	123	121	123	
		99.2%	97.6%	99.2%	
	Abandoned During Conversation	4	3	2	
		3.2%	2.4%	1.6%	
	Normal Termination Calls	119	118	121	
		96.0%	95.2%	97.6%	
Non-Routed Calls		1	3	1	
		0.8%	2.4%	0.8%	
Dropped Calls	Total	5	6	3	
		4.0%	4.8%	2.4%	
	Call Ending Causes	No Service	0	0	0
			0.0%	0.0%	0.0%
		Congestion	5	5	2
			4.0%	4.0%	1.6%
Radio Link Failure		0	1	0	
	0.0%	0.8%	0.0%		
	Other	0	0	1	
		0.0%	0.0%	0.8%	



2.6.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	240	242	246
Audio Quality (MOS)	Poor	2	1	2	
		0.8%	0.4%	0.8%	
	Acceptable	132	65	63	
		55.0%	26.9%	25.6%	
	Good	106	176	181	
		44.2%	72.7%	73.6%	

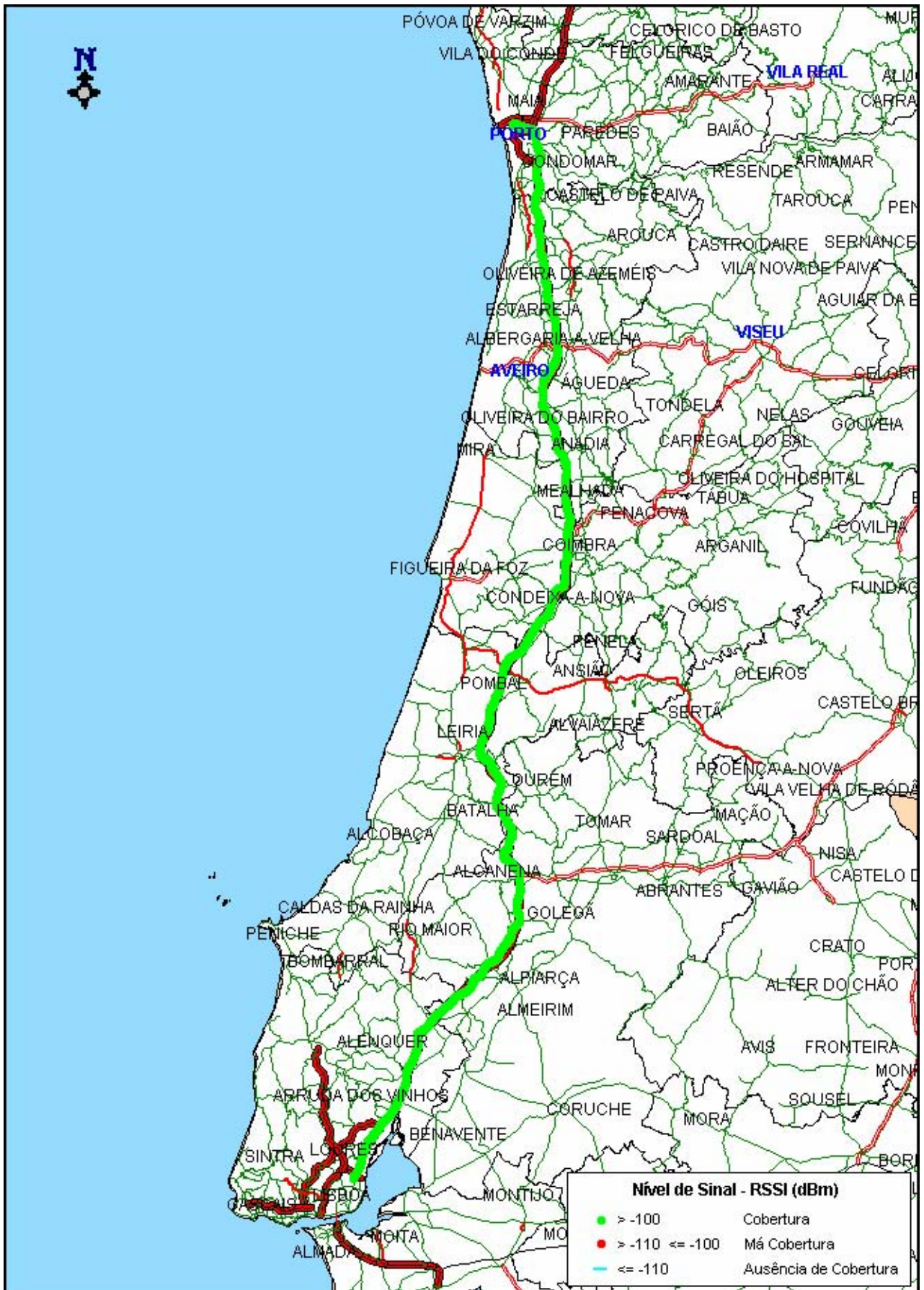


2.6.3 COVERAGE

(Following Pages)

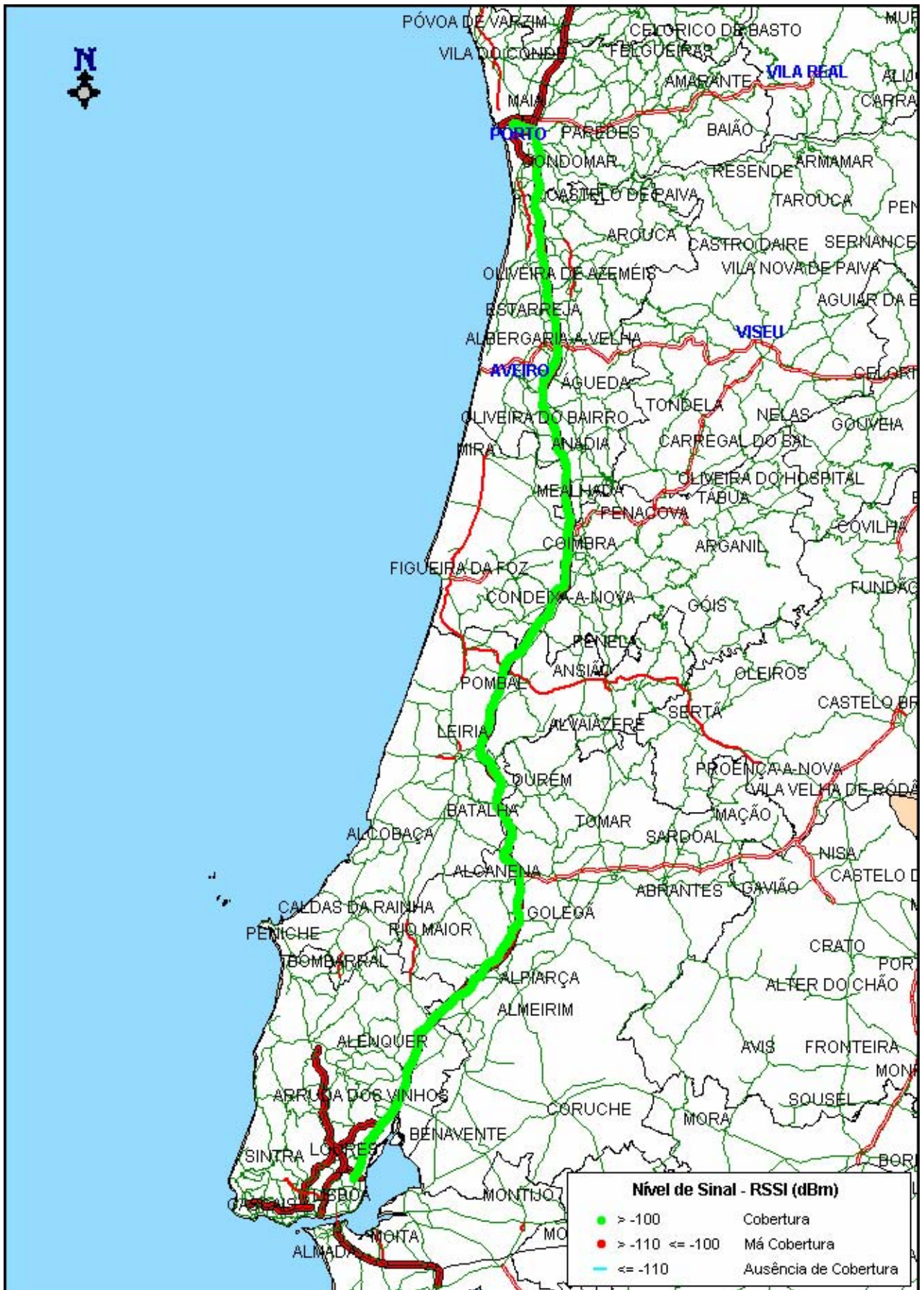
LISBON-PORTO (A1)

OPTIMUS - PSTN



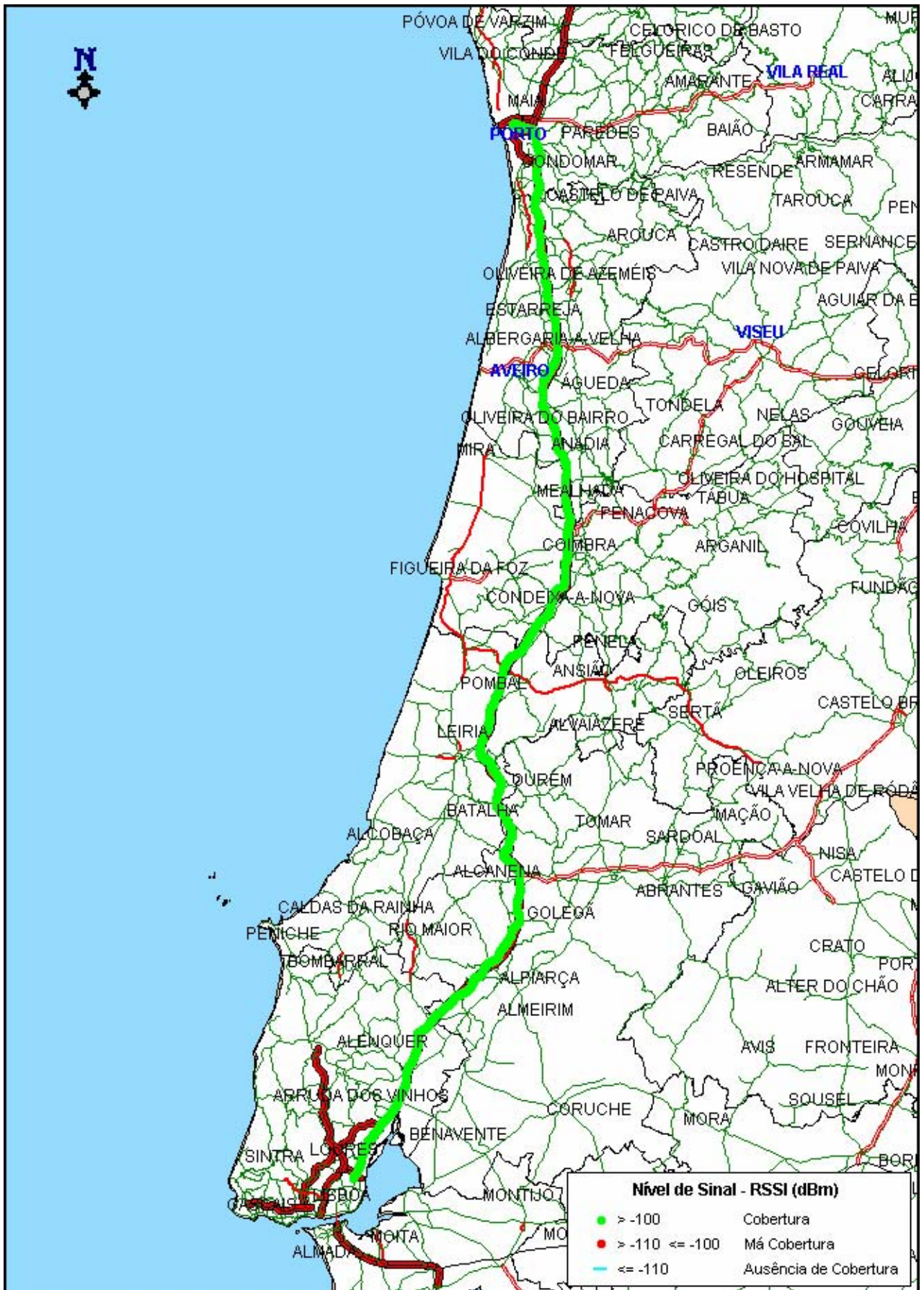
LISBON-PORTO (A1)

VODAFONE - PSTN



LISBON-PORTO (A1)

TMN - PSTN



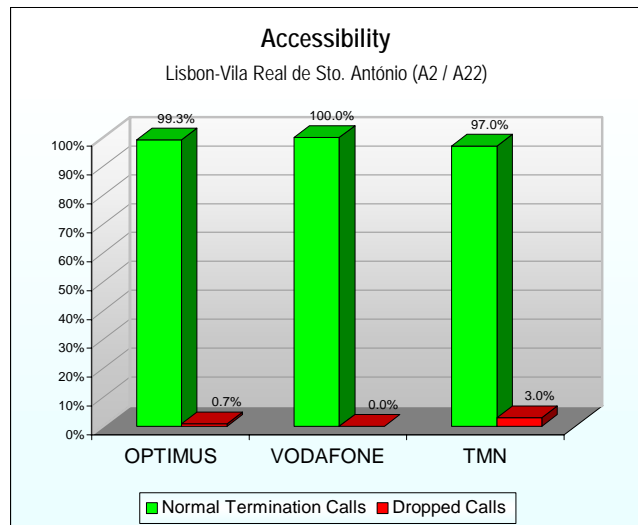
2.7 LISBON-VILA REAL DE S.^{TO} ANTÓNIO (A2 / A22)

Measurement Sessions on:

- 17 October 2005 between 10h39 and 13h20
- 19 October 2005 between 14h06 and 17h30

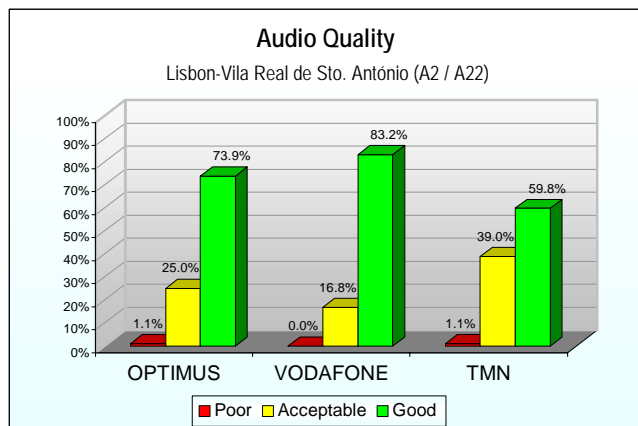
2.7.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	135	134	134
			100%	100%	100%
Routed Calls	Total	134	134	132	
	Abandoned During Conversation	0	0	2	
	Normal Termination Calls	134	134	130	
			99.3%	100.0%	97.0%
Non-Routed Calls		1	0	2	
			0.7%	0.0%	1.5%
Dropped Calls	Total	1	0	4	
	Call Ending Causes	No Service	0	0	0
		Congestion	0	0	1
		Radio Link Failure	0	0	2
		Other	1	0	1
			0.7%	0.0%	3.0%



2.7.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	268	268	264
			100%	100%	100%
Audio Quality (MOS)	Poor	3	0	3	
	Acceptable	67	45	103	
	Good	198	223	158	
			1.1%	0.0%	1.1%
			25.0%	16.8%	39.0%
			73.9%	83.2%	59.8%

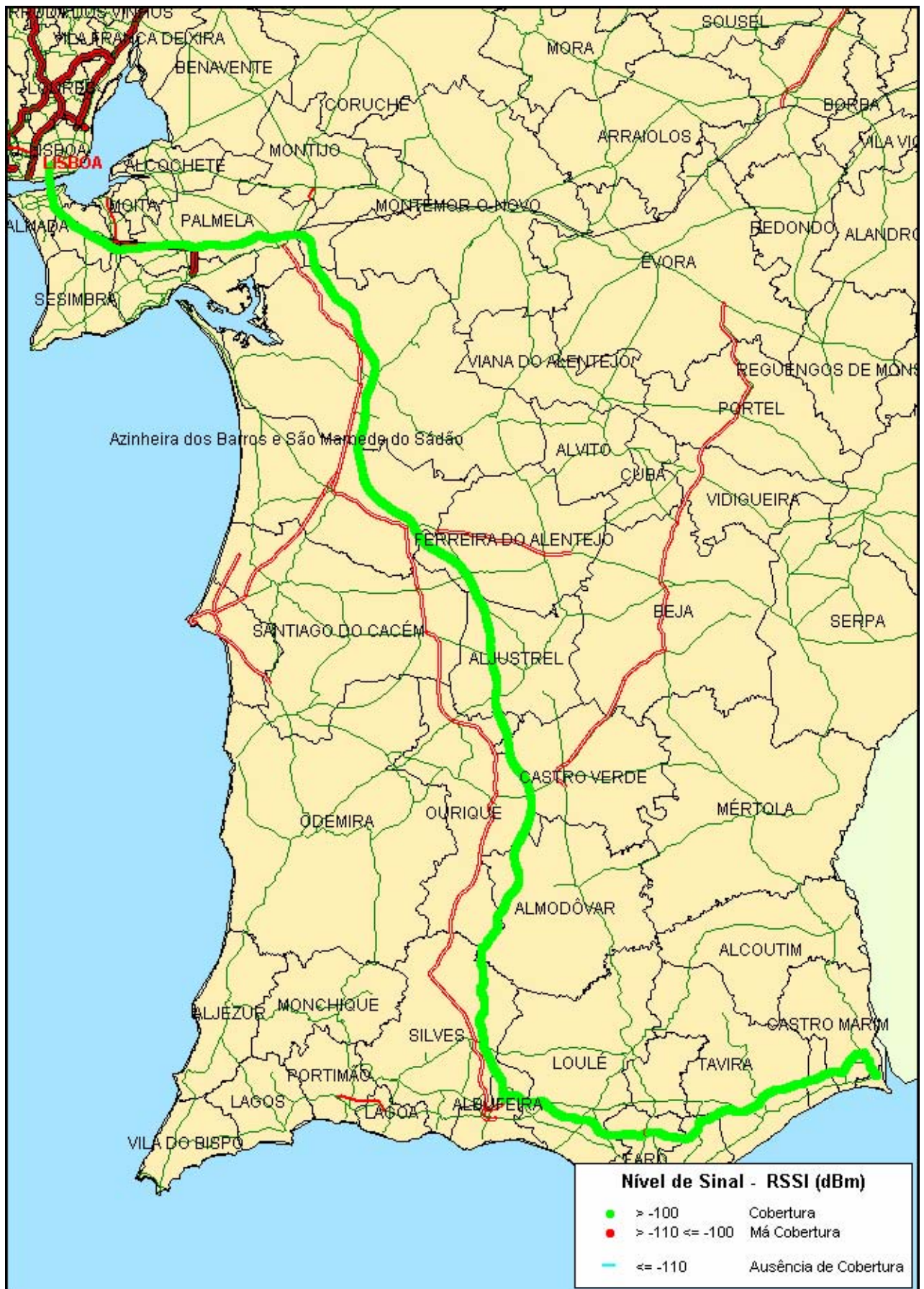


2.7.3 COVERAGE

(Following Pages)

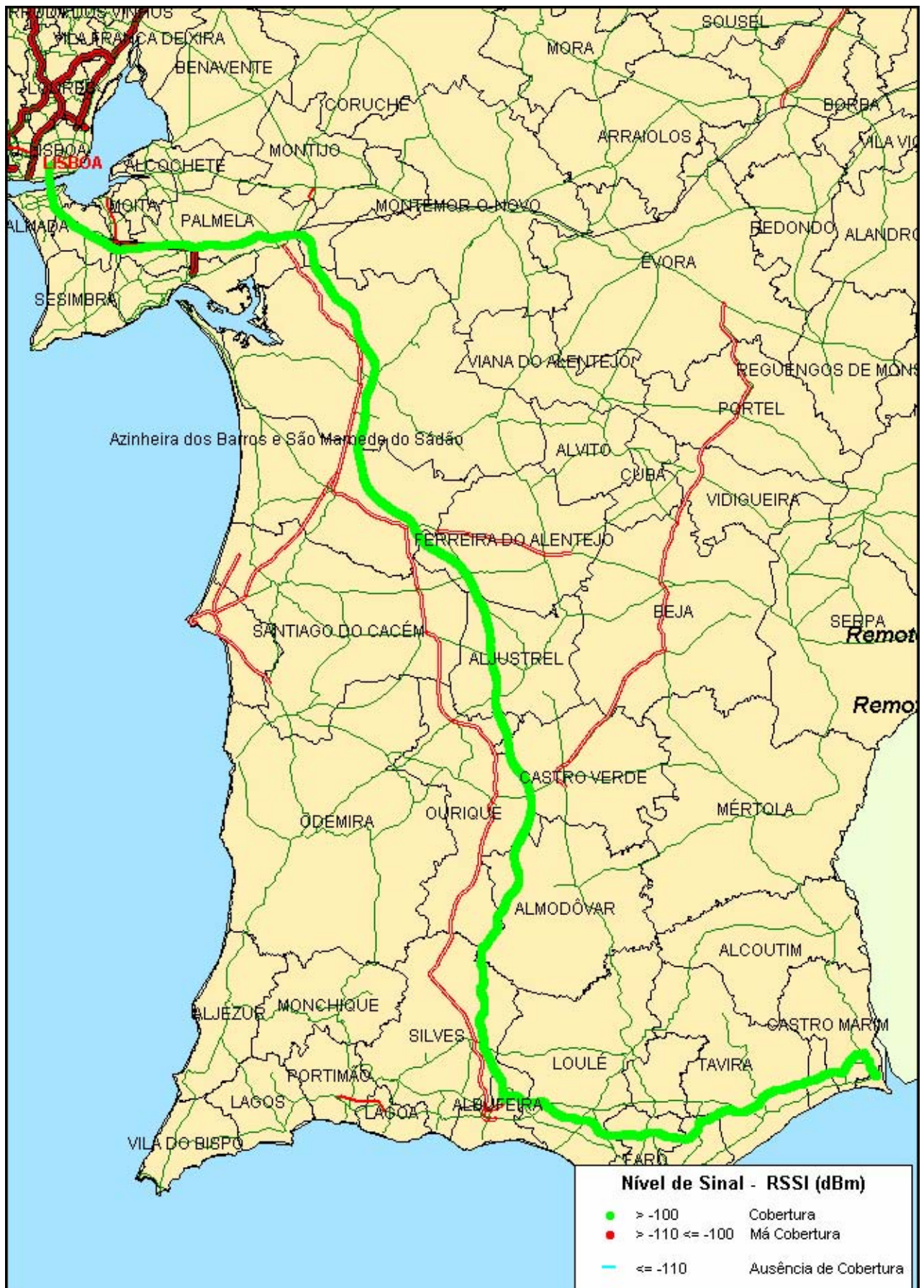
LISBON-VILA REAL DE S.^{TO} ANTÓNIO (A2 / A22)

OPTIMUS - PSTN



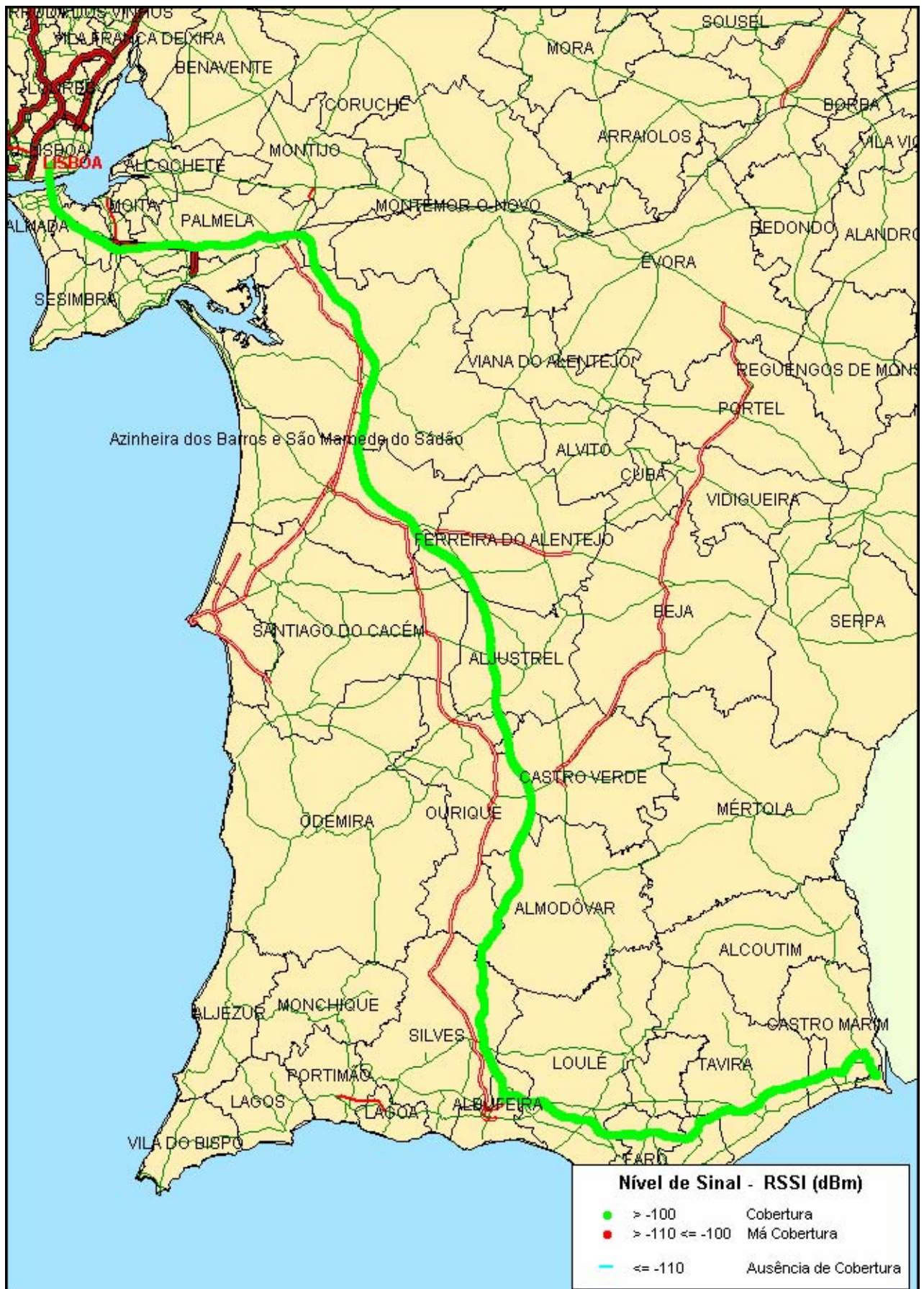
LISBON-VILA REAL DE S.^{TO} ANTÓNIO (A2 / A22)

VODAFONE - PSTN



LISBON-VILA REAL DE S.^{TO} ANTÓNIO (A2 / A22)

TMN - PSTN



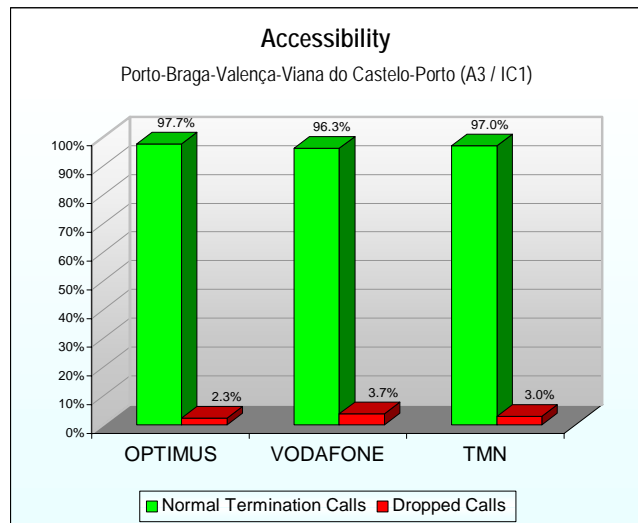
2.8 PORTO-BRAGA-VALENÇA-VIANA DO CASTELO-PORTO (A3 / IC1)

Measurement Sessions on:

- 20 September 2005 between 8h25 and 11h27 and between 13h12 and 16h11

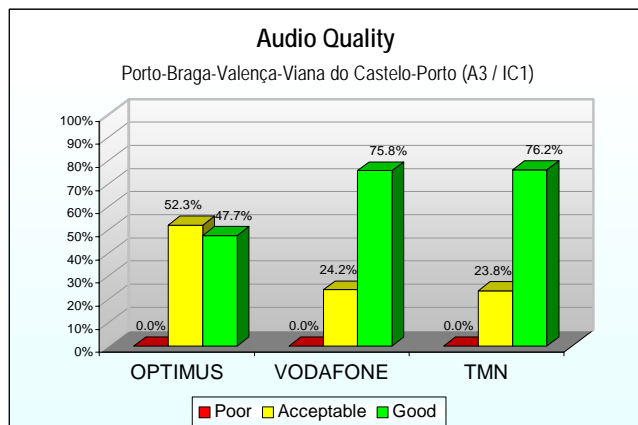
2.8.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	133 100%	134 100%	134 100%
Routed Calls	Total	131 98.5%	131 97.8%	131 97.8%	
	Abandoned During Conversation	1 0.8%	2 1.5%	1 0.7%	
	Normal Termination Calls	130 97.7%	129 96.3%	130 97.0%	
Non-Routed Calls		2 1.5%	3 2.2%	3 2.2%	
Dropped Calls	Total	3 2.3%	5 3.7%	4 3.0%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	2 1.5%	4 3.0%	2 1.5%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	1 0.8%	1 0.7%	2 1.5%



2.8.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	260 100%	260 100%	260 100%
Audio Quality (MOS)	Poor	0 0.0%	0 0.0%	0 0.0%	
	Acceptable	136 52.3%	63 24.2%	62 23.8%	
	Good	124 47.7%	197 75.8%	198 76.2%	

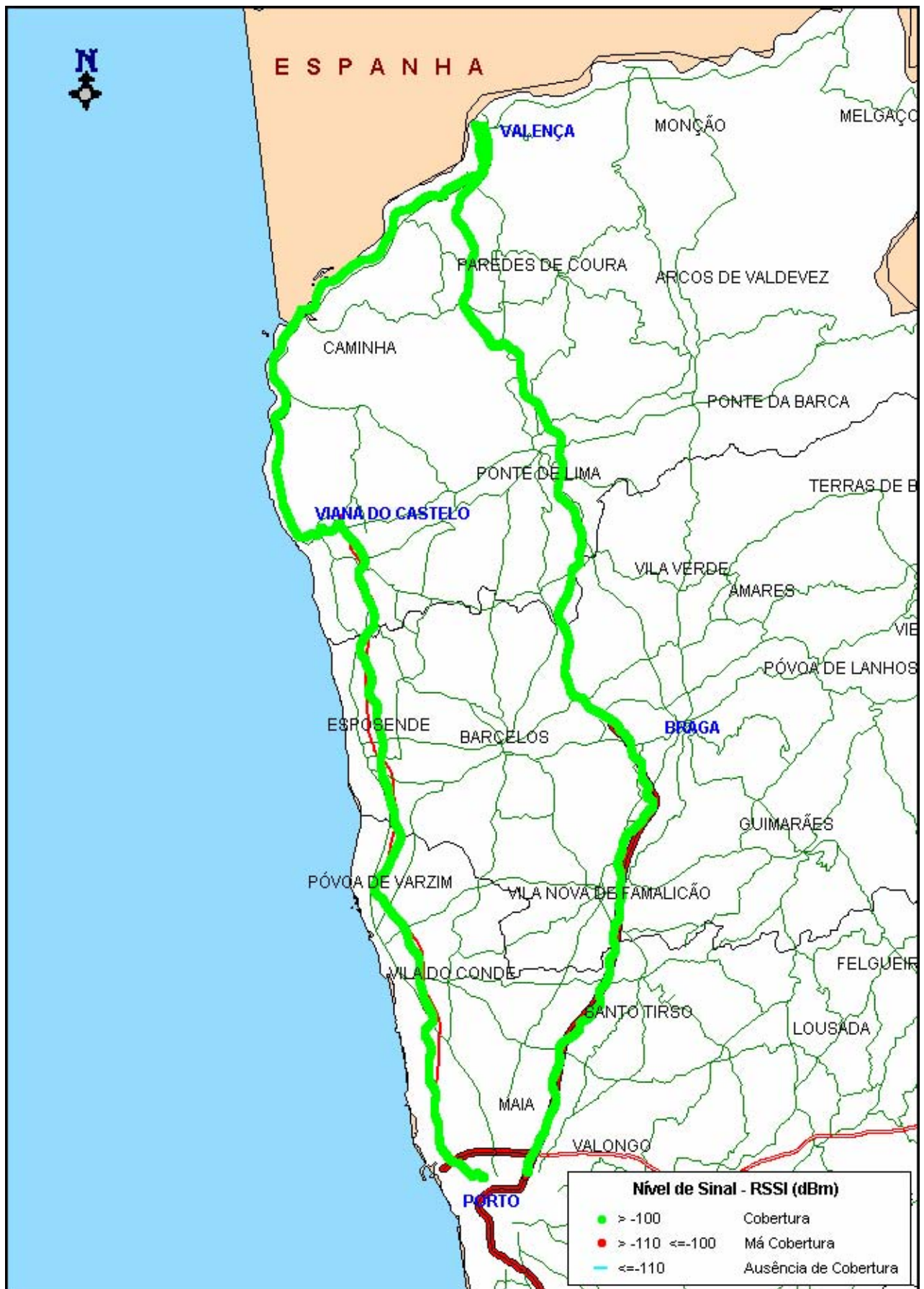


2.8.3 COVERAGE

(Following Pages)

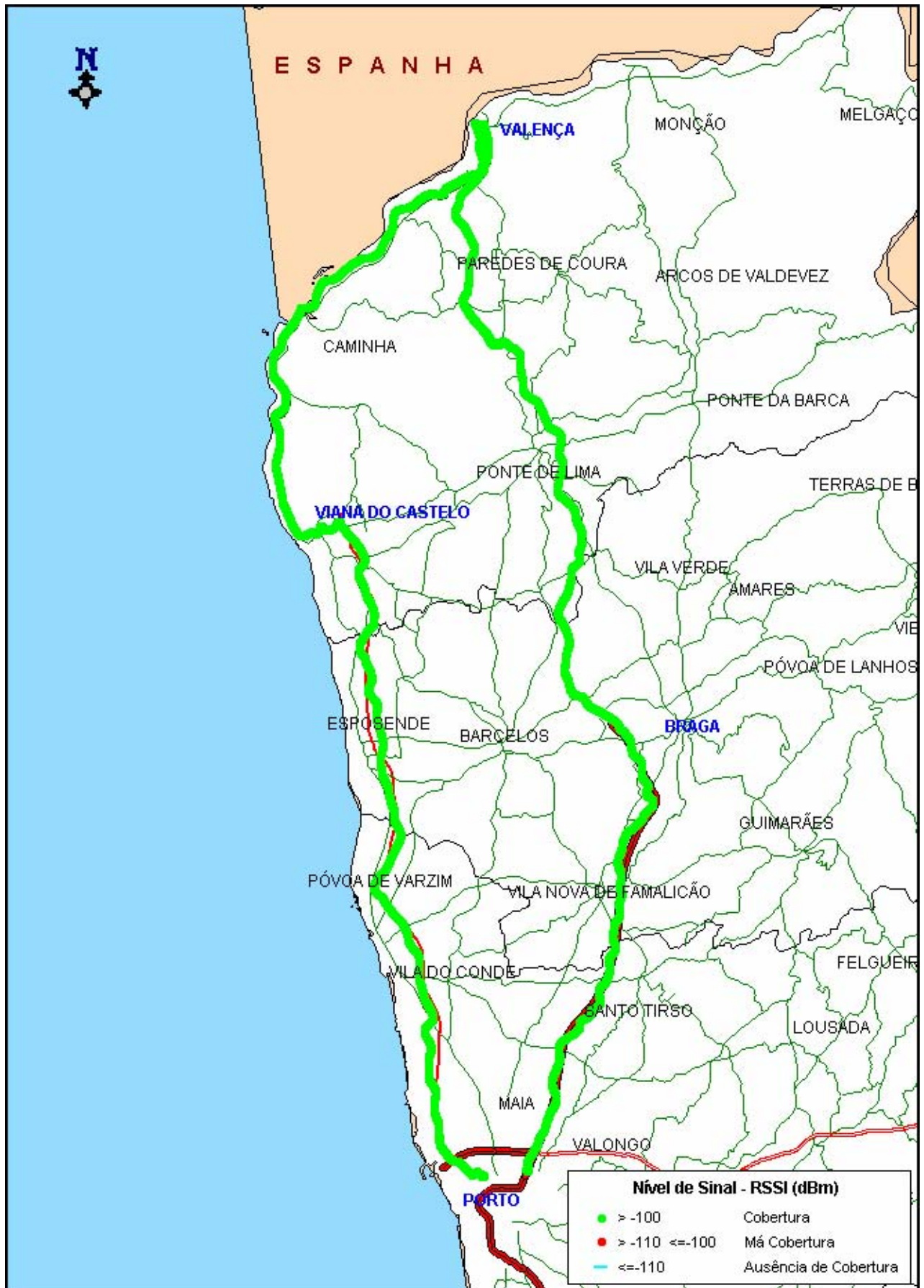
PORTO-BRAGA-VALENÇA-VIANA DO CASTELO-PORTO (A3/IC1)

OPTIMUS - PSTN



PORTO-BRAGA-VALENÇA-VIANA DO CASTELO-PORTO (A3/IC1)

TMN - PSTN



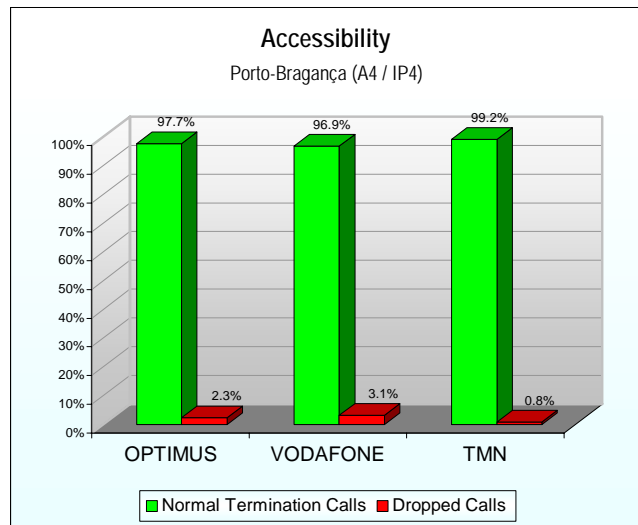
2.9 PORTO-BRAGANÇA (A4 / IP4)

Measurement Sessions on:

- 21 September 2005 between 8h35 and 11h28
- 22 September 2005 between 13h32 and 16h26

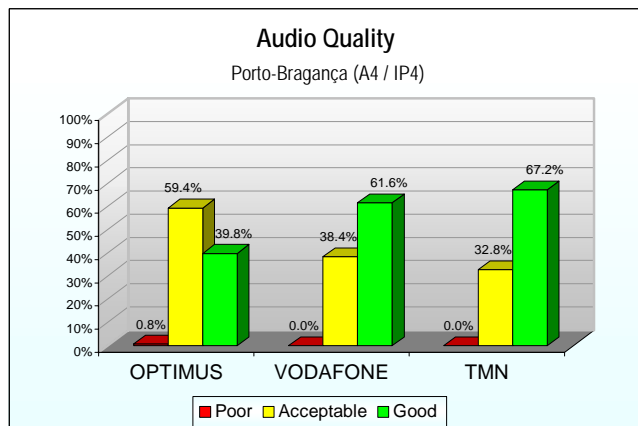
2.9.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN	
		Total	128	128	128	
Routed Calls	Total		127	125	128	
			99.2%	97.7%	100.0%	
	Abandoned During Conversation		2	1	1	
	Normal Termination Calls		125	124	127	
			97.7%	96.9%	99.2%	
Non-Routed Calls			1	3	0	
			0.8%	2.3%	0.0%	
Dropped Calls	Total		3	4	1	
			2.3%	3.1%	0.8%	
	Call Ending Causes	No Service		0	0	0
				0.0%	0.0%	0.0%
		Congestion		2	4	1
				1.6%	3.1%	0.8%
Radio Link Failure			0	0	0	
			0.0%	0.0%		
	Other		1	0	0	
			0.8%	0.0%	0.0%	



2.9.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	254	250	256
Audio Quality (MOS)	Poor		2	0	0
			0.8%	0.0%	0.0%
	Acceptable		151	96	84
			59.4%	38.4%	32.8%
	Good		101	154	172
			39.8%	61.6%	67.2%



2.9.3 COVERAGE

(Following Pages)

PORTO-BRAGANÇA (A4 / IP4)

OPTIMUS - PSTN



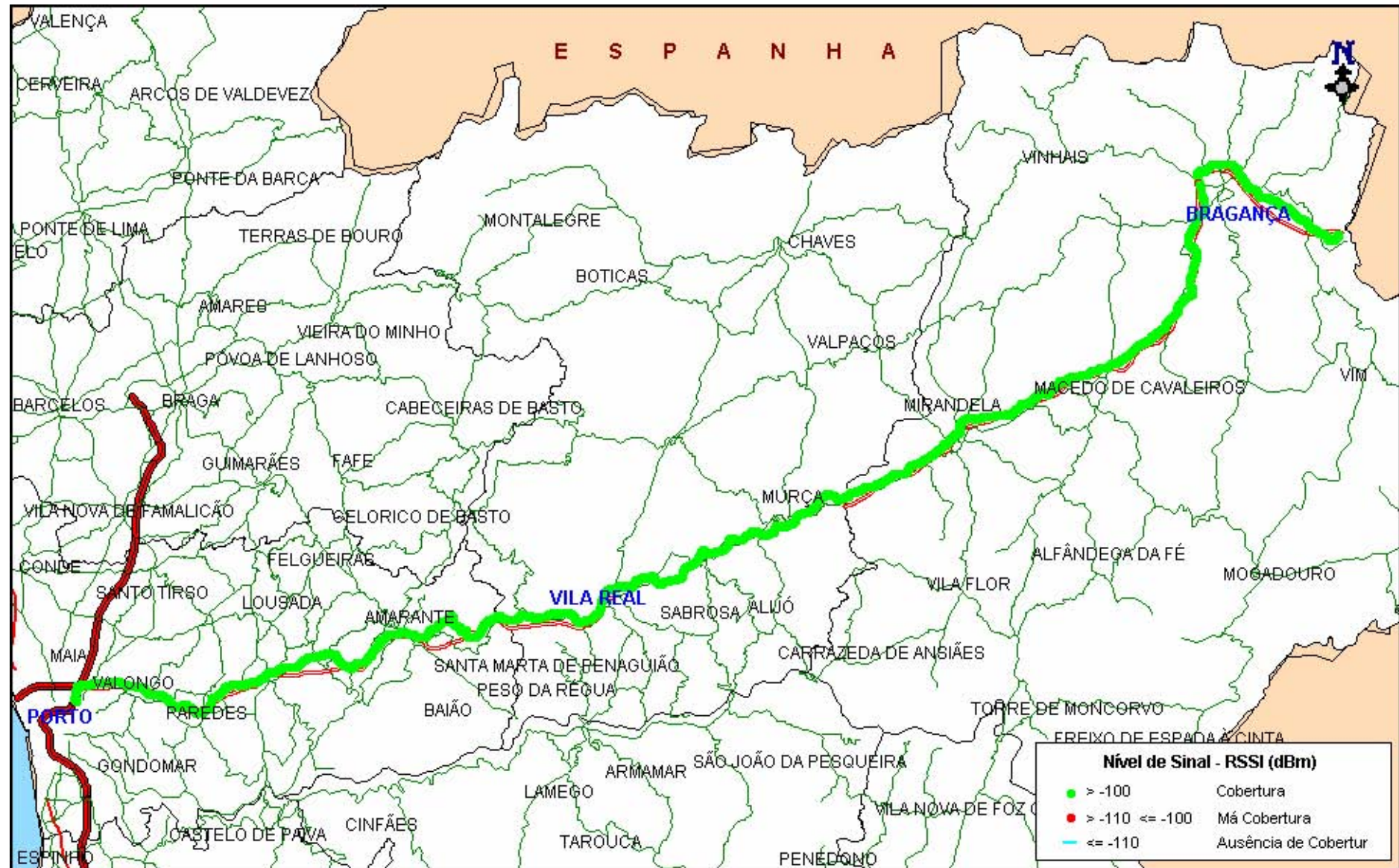
PORTO-BRAGANÇA (A4 / IP4)

VODAFONE - PSTN



PORTO-BRAGANÇA (A4 / IP4)

TMN - PSTN



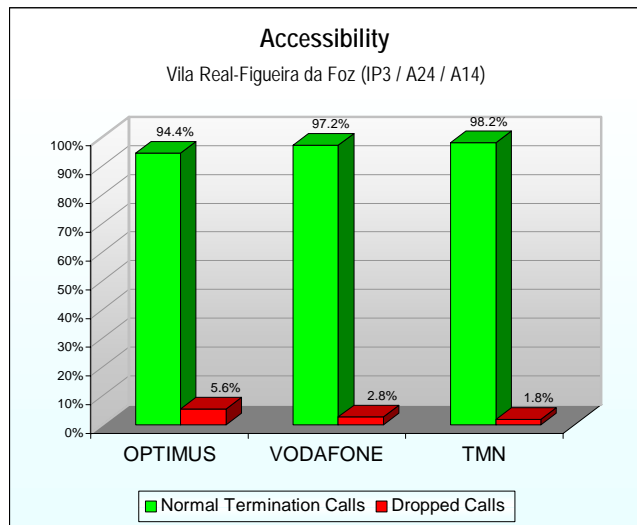
2.10 VILA REAL-FIGUEIRA DA FOZ (IP3 / A24 / A14)

Measurement Sessions on:

- 4 October 2005 between 9h19 and 11h49 and between 13h11 and 15h39

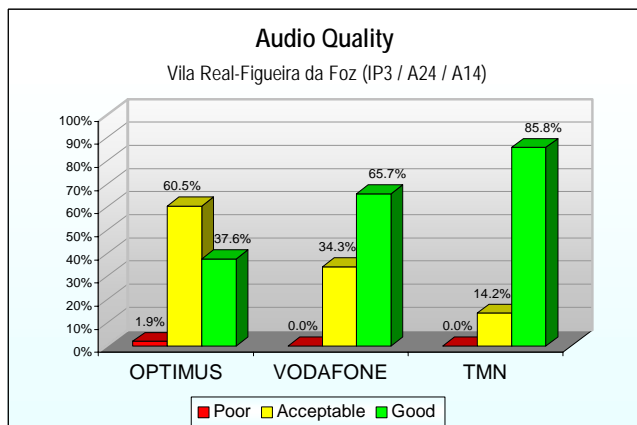
2.10.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	108 100%	109 100%	109 100%
Routed Calls	Total	106 98.1%	108 99.1%	109 100.0%	
	Abandoned During Conversation	4 3.7%	2 1.8%	2 1.8%	
	Normal Termination Calls	102 94.4%	106 97.2%	107 98.2%	
Non-Routed Calls		2 1.9%	1 0.9%	0 0.0%	
Dropped Calls	Total	6 5.6%	3 2.8%	2 1.8%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	3 2.8%	1 0.9%	2 1.8%
		Radio Link Failure	2 1.9%	1 0.9%	0 0.0%
		Other	1 0.9%	1 0.9%	0 0.0%



2.10.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	210 100%	216 100%	218 100%
Audio Quality (MOS)	Poor	4 1.9%	0 0.0%	0 0.0%	
	Acceptable	127 60.5%	74 34.3%	31 14.2%	
	Good	79 37.6%	142 65.7%	187 85.8%	

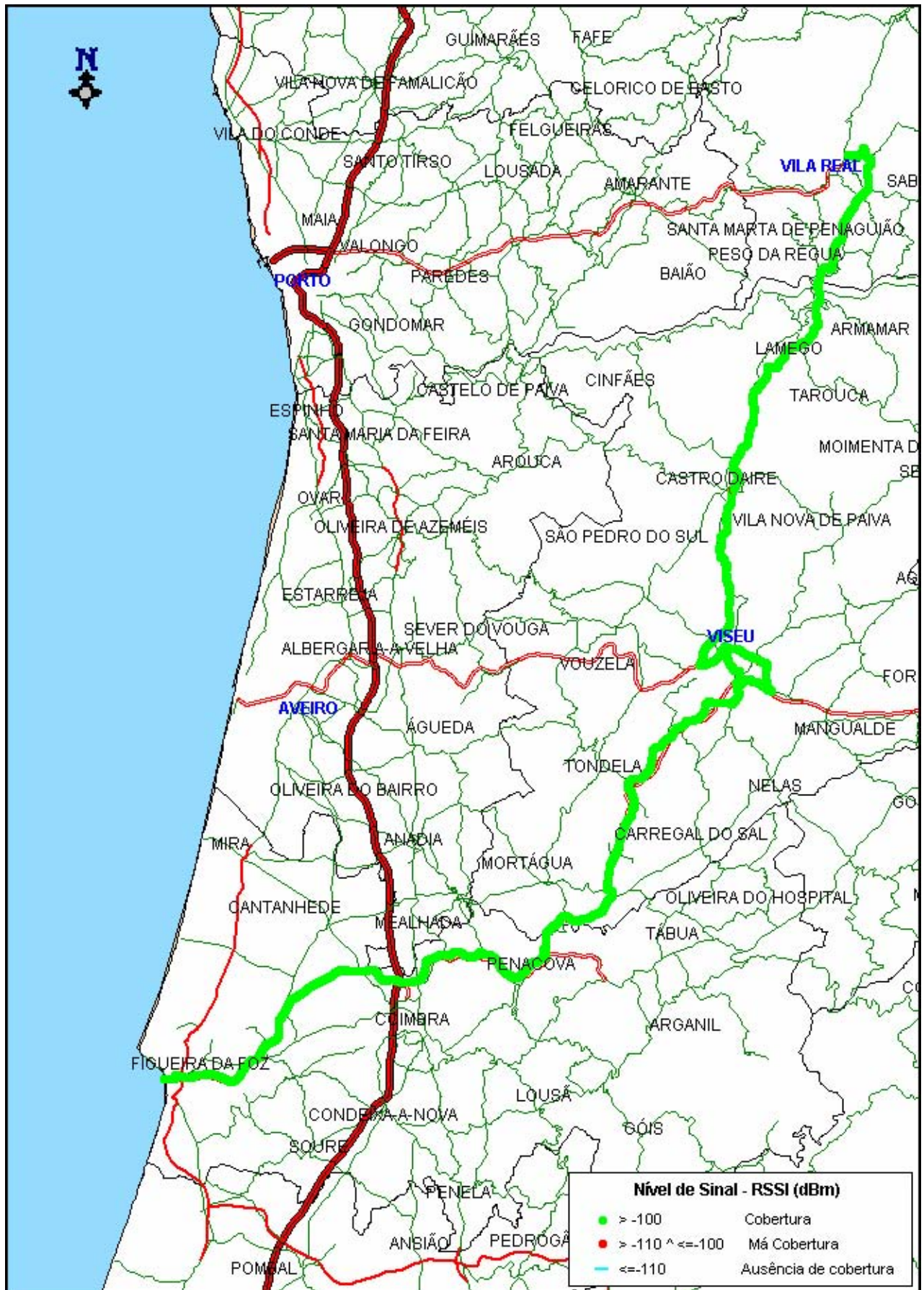


2.10.3 COVERAGE

(Following Pages)

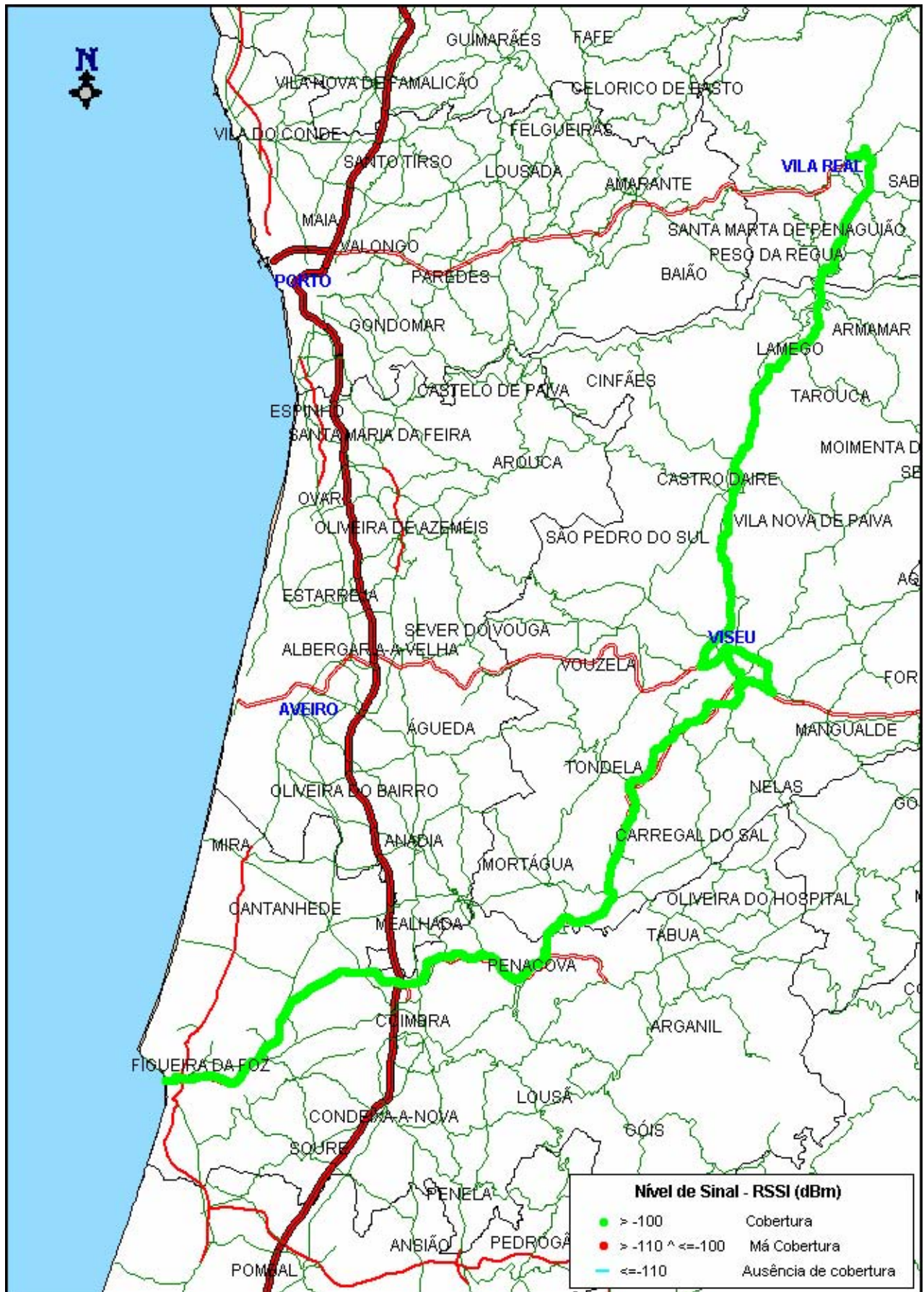
VILA REAL-FIGUEIRA DA FOZ (IP3 / A24 / A14)

OPTIMUS - PSTN



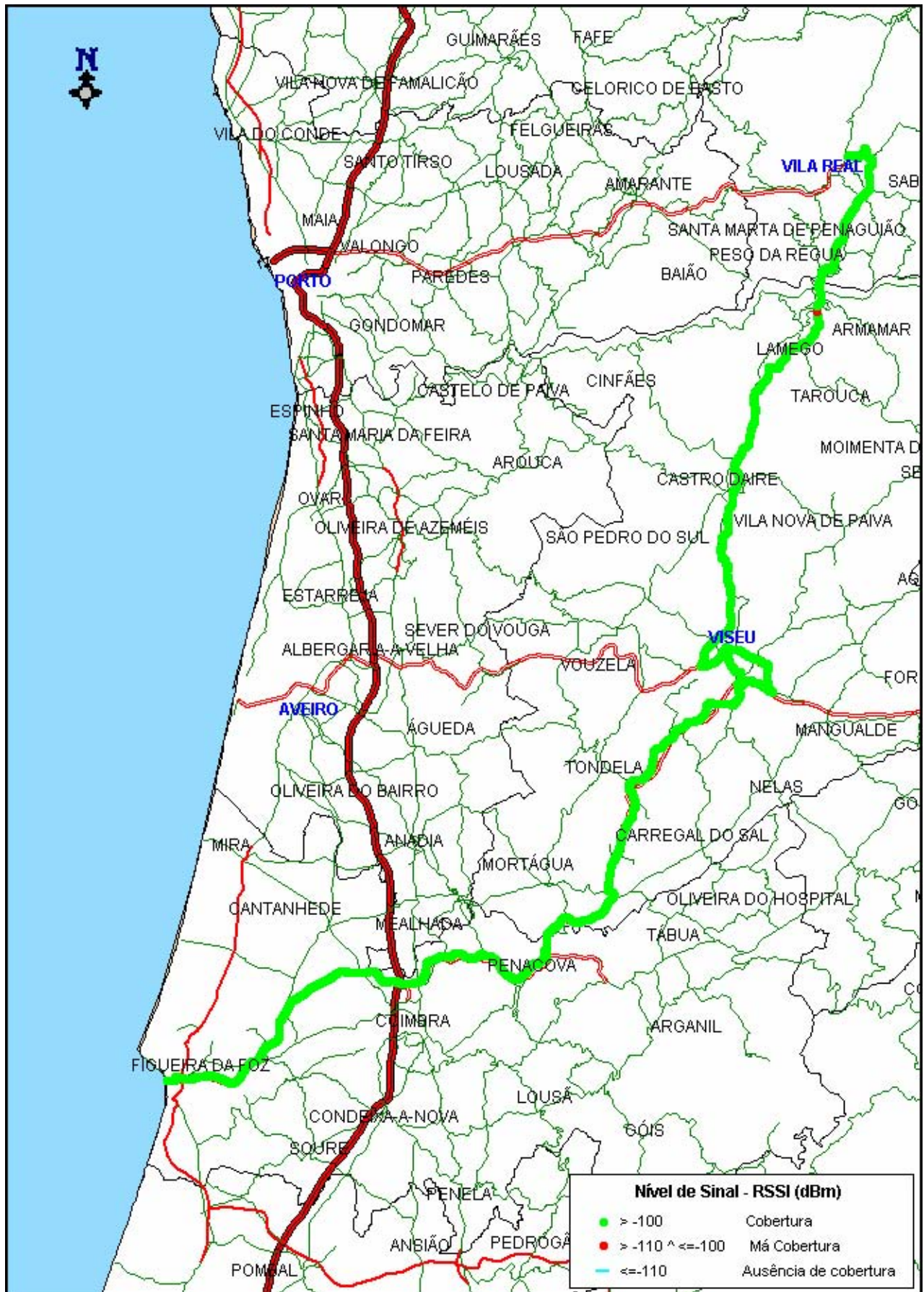
VILA REAL-FIGUEIRA DA FOZ (IP3 / A24 / A14)

VODAFONE - PSTN



VILA REAL-FIGUEIRA DA FOZ (IP3 / A24 / A14)

TMN - PSTN



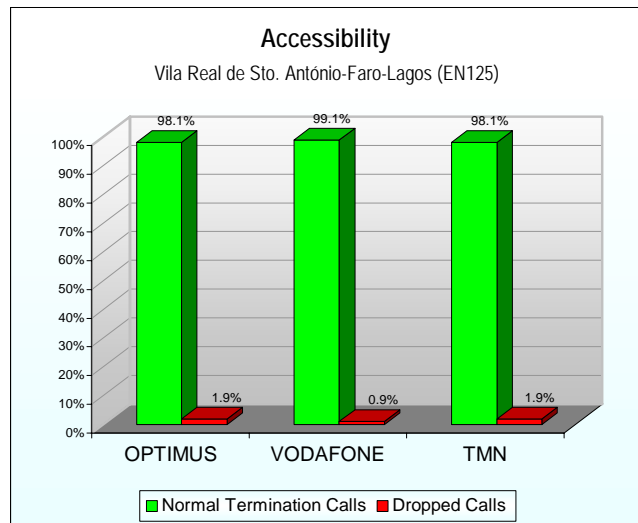
2.11 VILA REAL DE S.^{TO} ANTÓNIO-FARO-LAGOS (EN125)

Measurement Sessions on:

- 17 October 2005 between 15h23 and 17h43
- 19 October 2005 between 10h25 and 12h53

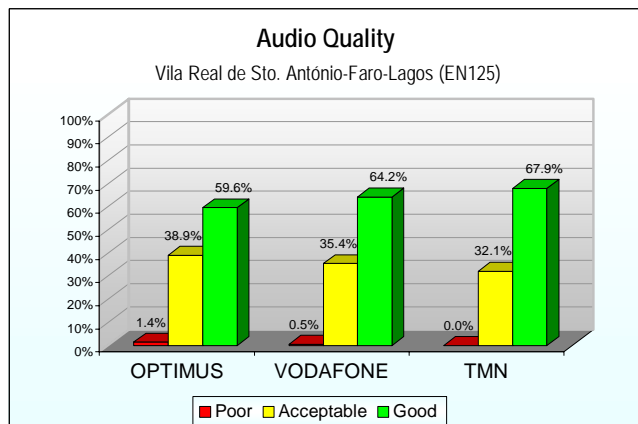
2.11.1 ACCESSIBILITY

Calls Made		Operator	OPTIMUS	VODAFONE	TMN
		Total	106 100%	107 100%	107 100%
Routed Calls	Total	104 98.1%	106 99.1%	106 99.1%	
	Abandoned During Conversation	0 0.0%	0 0.0%	1 0.9%	
	Normal Termination Calls	104 98.1%	106 99.1%	105 98.1%	
Non-Routed Calls		2 1.9%	1 0.9%	1 0.9%	
Dropped Calls	Total	2 1.9%	1 0.9%	2 1.9%	
	Call Ending Causes	No Service	0 0.0%	0 0.0%	0 0.0%
		Congestion	1 0.9%	1 0.9%	1 0.9%
		Radio Link Failure	0 0.0%	0 0.0%	0 0.0%
		Other	1 0.9%	0 0.0%	1 0.9%



2.11.2 AUDIO QUALITY

Calls with Measurements		Operator	OPTIMUS	VODAFONE	TMN
		Total	208 100%	212 100%	212 100%
Audio Quality (MOS)	Poor	3 1.4%	1 0.5%	0 0.0%	
	Acceptable	81 38.9%	75 35.4%	68 32.1%	
	Good	124 59.6%	136 64.2%	144 67.9%	



2.11.3 COVERAGE

(Following Pages)

VILA REAL DE S.^{TO} ANTÓNIO-FARO-LAGOS (EN125)

OPTIMUS - PSTN



White