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ACIF

A large, light blue decorative swirl graphic dominates the background of the page. It starts as a wide, thick line at the top left and spirals inward, becoming thinner and more intricate as it moves towards the center and bottom right. The swirl is composed of multiple overlapping layers, creating a dynamic and organic shape.

AUSTRALIAN COMMUNICATIONS INDUSTRY FORUM

SPECIFICATION

MOBILE LOCATION INDICATOR – 1800/13/1300

ACIF G532 FEBRUARY 1999

Mobile Location Indicator – 1800/13/1300

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Explanatory Statement/Foreword

For special services such as 13, 1300, 1800, the location information of a caller or called party is useful so that the call can be terminated to the nominated call answering point. Currently, there is no international or national standard recommending how to provide and handle this location information.

The Mobile origin Location Information (MoLI) sub-working group established by the Network Industry Interworking Forum (NIIF) had the task of recommending a method for the delivery of MoLI across networks.

The key deliverables identified by the MoLI sub-working group include :

Stage 1(a) MoLI from Mobile Carriage Service Provider network (Calling party) to Inbound Services Prime Carriage Service Provider (PCSP) / Contracted Prime Carriage Service Provider (CPCSP) network (Called Party)

A Service Description including the first key deliverable has been endorsed by ACIF, and a Working Committee (NRP/WC3) established to develop a signalling specification to implement this.

The implementation interacts with international signalling specifications developed by ITU-T and will take some time to implement.

This specification describes an interim method which may be implementable prior to adoption of the final signalling solution.

Yasmin Dugan

Chair

ACIF Network Reference Panel sub-group on MOLI Signalling

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SPECIFICATION

1 Scope and overview

1.1 Scope

This document describes an interim method of providing mobile location indication for calls to Local Rate and Freephone Services from mobile origins.

This method should be applicable to the currently allocated range of Local Rate (13x) and Freephone (180x) Service numbers, including those ported from any carrier.

This specification applies to all mobile carriers and all Carriage Service Providers providing Local Rate and Freephone Services.

1.2 Overview

For special services such as Local Rate and Freephone Services, the location of a mobile caller is useful so that the call can be terminated to the nominated call answering point. Currently, there is no international or national standard recommending how to provide and handle this location information.

This specification describes an interim method of providing an approximation of the mobile customer's location by the insertion of 3 decimal digits 'ABC', representing a Standardised Mobile Service Area, in the Local Rate or Freephone Service number.

2 Participants

The group that developed this Specification consisted of the following organisations and their representatives:

Representative	Organisation
Yasmin Dugan (<i>Chairman</i>)	Telstra Corporation
Ian Binnie (<i>Editor</i>)	Optus Communications
Robert Tozer	AAPT
Ken Bell	Australian Communications Authority (ACA)
Mike Elsegood	Optus Communications
Jovy Singson	Optus Communications
Roger Nicoll	Primus Telecommunications
Peter Bennett	Telstra Corporation
Sam Fois	Telstra Corporation
Paul Tasker	Vodafone Network
Vince Turco	Vodafone Network

James Duck of ACIF provided project management support.

3 References

The following publications are referred to in this Specification. At the time of publication, the editions were valid.

Publication	Title
ACIF G503:1998	Stage 1A and 1B Service Description on Mobile (origin) Location Indication (MoLI) Version 1.1 5th September 1997
NIIF	“Interconnect Dial Plan, Issue : 1.1 21 February, 1997 (republished as part of ACIF G500:1998)
ACIF G511:1998	Number Portability Network Plan (Version 1.0 : April 1998
ACA	Telecommunications Numbering Plan 1997

4 Definitions and Abbreviations

For the purposes of this Specification, the following definitions and abbreviations apply:

ACA	Australian Communications Authority
ACIF	Australian Communications Industry Forum
BSC	Base Station Controller
BTS	Base Transceiver Station
CACSP	Contracted Access Carriage Service Provider
CNA	Closed Numbering Area
CSP	Carriage Service Provider
MoLI	Mobile Location Information
MSC	Mobile Switching Centre
NIIF	Network Interworking Industry Forum
NRP	Network Reference Panel
OACSP	Originating Access Carriage Service Provider
PCSP	Prime Carriage Service Provider
POI	Point of Interconnection
PSTN	Public Switched Telephone Network
SMSA	Standardised Mobile Service Area

Standardised Mobile Service Area (SMSA) is an area comprising a number of PSTN charge zones, characterised by a nominated Central Zone and all zones adjoining that Central Zone which may include other zones not included in any other SMSA.

Central Zone is the nominal centre of a SMSA.

5 General Description

The location information is based on the cell site (BTS) to which the mobile customer is attached when initiating a call. (Mobile calls may not always be serviced by the closest base station and therefore the location information is an approximation of the mobile customer's location.)

Figure 5.1 and Figure 5.2 illustrate the delivery of location information from a mobile network to a Service Provider network.

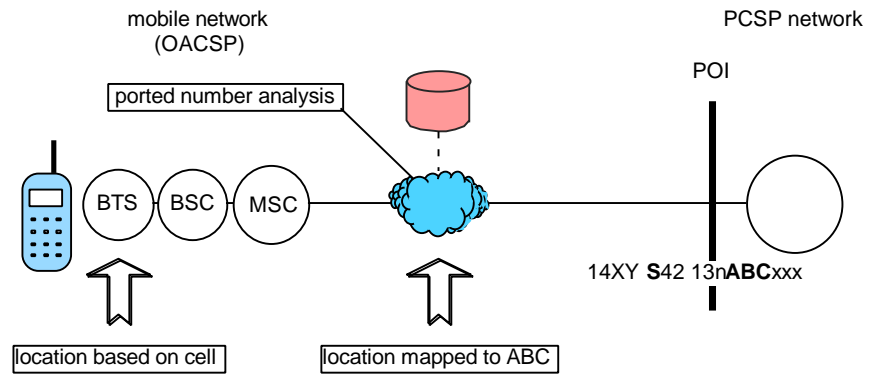


Figure 5.1
Mobile Access network direct to Service Provider network

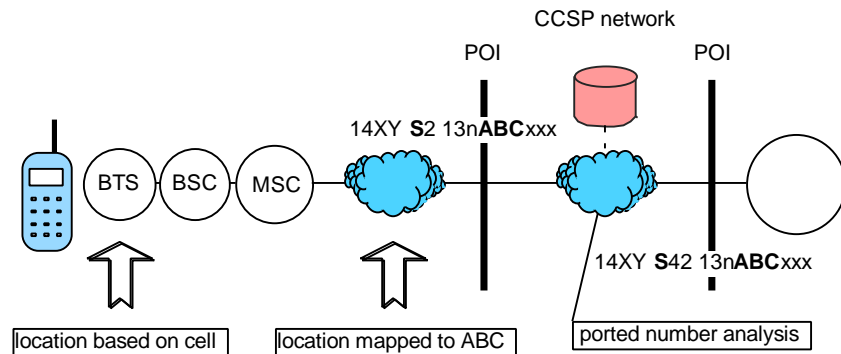


Figure 5.2
Mobile Access network indirect to Service Provider network

5.1 Definition of Standardised Mobile Service Area

Each BTS will be assigned a value based on the Standardised Mobile Service Area (SMSA) which contains the cell site, or the nearest SMSA. Each SMSA contains a number of charge zones and is characterised by a nominal charge zone ('Central Zone').

The zones comprising a SMSA and the Central Zone are defined in a SMSA Register, to be maintained by the ACIF (example in Appendix B).

For the purpose of this specification the values to be used are defined in Appendix A which contain the Central Zones, 'JK' and corresponding 'ABC' values.

Each 'JK' value is a 2 digit hexadecimal number (range 01 to EE, values containing F excluded) which will be represented by its corresponding decimal value and represented by 3 'ABC' digits (range 001 to 238). (A maximum of 224 unique values are available, currently 203 are allocated.)

5.2 Use of MoLI

Prime Carriage Service Providers should consider a call containing MoLI to have originated from the Charge Zone indicated by the 'ABC' value in Appendix A or any adjoining charge zones.

Mobile operators should determine the appropriate SMSA for each BTS by reference to the SMSA Register.

6 Number related information

6.1 Identification of calls containing MoLI

A unique prefix is applied which enables these calls to be differentiated from calls not containing MoLI. A Service Indicator digit is proposed, in addition to the '42' to be used for ported calls. In the event of a mobile operator not performing porting analysis a Service Indicator 'S2' would be used rather than 'S42'.

This indicator would immediately follow the Carrier Identification Code 14XY.

The value '6' is recommended for the Service Indicator 'S'; refer to the current ACIF Interconnect Dial Plan for definition of Service Indicators.

6.2 Position of MoLI

The method described requires the insertion of 3 decimal digits 'ABC' in the Local Rate or Freephone Service number. This is to be inserted after the third digit for 6 digit Local Rate numbers, and after the sixth digit for all other numbers.

Table 6.1
Digit Insertion point

Number Dialed	Digit Length	POI Address Digits	n
13nxxx	6	14XY S42 13nABCxxx	1-3, 5-9
134nxx	6	14XY S42 134ABCnxx	0-4, 6-9
1345xxxx	8	14XY S42 1345xxABCxx	
130xxxxxxx	10	14XY S42 130xxxABCxxxx	
1800xxxxxx	10	14XY S42 1800xxABCxxxx	
1801xxxxxx	10	14XY S42 1801xxABCxxxx	
180nxxx	7	14XY S42 180nxxABCx	2-9

Notes: All Local Rate and Freephone number ranges in the ACA Numbering Plan are included in Table 6.1, even though these are not currently in use and MoLI may be excluded from some ranges.

6.3 Delivery of MoLI

The addition of MoLI information on a number range will be dependent on whether the Prime Carriage Service Provider (PCSP) of the Freephone or Local rate service requires MoLI.

The Mobile operator or CACSP will need to determine the PCSP for each call before deciding whether MoLI should be included.

6.4 Number Ranges

The implementation of MoLI is dependent on the method of implementation of number portability for Freephone and Local Rate services.

Agreement is to be reached by Industry on Freephone and Local Rate ranges number ranges that may include MoLI.

For initial implementation the allowable number ranges are those currently allocated less those nominated to be excluded in 6.4.1.

6.4.1 Number Ranges to be Excluded

Table 6.2 below identifies service types and number ranges that exclude MoLI.

Table 6.2
Numbers not requiring MoLI digit insertion

B Number Dialed	Service Type	Description
1800 03 1XXX	Freephone Transaction Service (EFTPOS)	EFTPOS transactions over Freephone dial up connection.
1800 12 XXXX	International Freephone	Tollfree international calling.
1800 14 XXXX	International Freephone	Tollfree international calling.
1800 88 1XXX	International Calling Card Access	International calling card access.
1800 9(0-1) XXXX	Call Home Access (Homelink™)	Access numbers for secure fixed destination automatic reverse charge service.

Note: Homelink™ cannot currently be dialled by mobile customers.

7 Interaction with other supplementary services

There is no interaction with other supplementary services.

MoLI shall only be included in single party calls originated by a mobile customer. (MoLI will not be included in three way calls or forwarded calls.)

Appendix A —

Central Zone	Area	CNA	JK	ABC
SYDNEY	S	02	01	001
WINDSOR NSW	S	02	02	002
PENRITH	S	02	03	003
CAMPBELLTOWN	S	02	04	004
WOLLONGONG	NS	02	05	005
NOWRA	NS	02	06	006
MORUYA	NS	02	07	007
LAWSON	S	02	08	008
YOUNG	NS	02	09	009
MILES	QS	07	0A	010
MONTO	QS	07	0B	011
MILLMERRAN	QS	07	0C	012
CLERMONT	QS	07	0D	013
INGLEWOOD QLD	QS	07	0E	014
CANBERRA	NS	02	10	016
COOMA	NS	02	11	017
YASS	NS	02	12	018
BOWRAL	NS	02	13	019
GOULBURN	NS	02	14	020
ALBURY	NS	02	15	021
GUNDAGAI	NS	02	16	022
WAGGA	NS	02	17	023
GRIFFITH	NS	02	18	024
WEST WYALONG	NS	02	19	025
LONGREACH	QS	07	1A	026
CEDUNA	SA	08	1B	027
ROXBY DOWNS	SA	08	1C	028
WOOMERA	SA	08	1D	029
PYENGANA	T	03	1E	030
NARRANDERA	NS	02	20	032
BEGA	NS	02	21	033
MELBOURNE	M	03	22	034
COWRA	NS	02	23	035
GEELONG	VW	03	24	036
MORNINGTON	VE	03	25	037
HEALESVILLE	VE	03	26	038
HAY	NS	02	27	039
DENILQUIN	NS	03	28	040
HOBART	T	03	29	041
OUSE	T	03	2A	042
BEEAC	VW	03	2B	043
KERANG	VW	03	2C	044
ORBOST	VE	03	2D	045
MARYBOROUGH VIC	VW	03	2E	046
OATLANDS	T	03	30	048
SMITHTON	T	03	31	049
ULVERSTONE	T	03	32	050
DELORAINÉ	T	03	33	051
LAUNCESTON	T	03	34	052
JERILDERIE	NS	03	35	053
MURGON	QS	07	36	054
CHINCHILLA	QS	07	37	055

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Central Zone	Area	CNA	JK	ABC
BRISBANE	B	07	38	056
NAMBOUR	QS	07	39	057
BRIGHT	VE	03	3A	058
LEONGATHA	VE	03	3B	059
ST ARNAUD	VW	03	3C	060
SWAN HILL	VW	03	3D	061
CARNARVON	WA	08	3E	062
TOOWOOMBA	QS	07	40	064
BEAUDESERT	QS	07	41	065
KINGAROY	QS	07	42	066
DALBY	QS	07	43	067
GYMPIE	QS	07	44	068
LOWOOD	QS	07	45	069
KALBAR	QS	07	46	070
WARWICK	QS	07	47	071
GOONDIWINDI	QS	07	48	072
TOOGOOLAWAH	QS	07	49	073
CHARLEVILLE	QS	07	4A	074
CLONCURRY	QN	07	4B	075
CUNNAMULLA	QS	07	4C	076
ST GEORGE	QS	07	4D	077
DERBY	WA	08	4E	078
GAYNDAH	QS	07	50	080
BLACKWATER	QS	07	51	081
SOUTHPORT	QS	07	52	082
BALRANALD	NS	03	53	083
MANJIMUP	WA	08	54	084
EMERALD QLD	QS	07	55	085
GLADSTONE QLD	QS	07	56	086
ROCKHAMPTON	QS	07	57	087
BUNDABERG	QS	07	58	088
MARYBOROUGH QLD	QS	07	59	089
TOM PRICE	WA	08	5B	091
MEEKATHARRA	WA	08	5D	093
JABIRU	NT	08	5E	094
CHILDERS	QS	07	60	096
ROMA	QS	07	61	097
BILOELA	QS	07	62	098
ST LAWRENCE	QN	07	63	099
TOWNSVILLE	QN	07	64	100
CAIRNS	QN	07	65	101
MOSSMAN	QN	07	66	102
INNISFAIL	QN	07	67	103
ATHERTON	QN	07	68	104
CANNON VALLEY	QN	07	69	105
MACKAY	QN	07	70	112
AYR	QN	07	71	113
INGHAM	QN	07	72	114
BOWEN	QN	07	73	115
TULLY	QN	07	74	116
MOUNT ISA	QN	07	75	117
MORANBAH	QN	07	76	118
CHARTERS TOWERS	QN	07	77	119
PERTH	P	08	78	120

APPENDIX A

Central Zone	Area	CNA	JK	ABC
MANDURAH	WA	08	79	121
BUNBURY	WA	08	80	128
BUSSELTON	WA	08	81	129
KALGOORLIE	WA	08	82	130
KAMBALDA	WA	08	83	131
KARRATHA	WA	08	84	132
NORTHAM	WA	08	85	133
PORT HEDLAND	WA	08	86	134
GERALDTON	WA	08	87	135
ALBANY	WA	08	88	136
COLLIE WA	WA	08	89	137
NEWMAN	WA	08	8A	138
KUNUNURRA	WA	08	8B	139
NORSEMAN	WA	08	8C	140
MERREDIN	WA	08	8D	141
WAGIN	WA	08	8E	142
ESPERANCE	WA	08	90	144
GINGIN	WA	08	91	145
DARWIN	NT	08	92	146
ALICE SPRINGS	NT	08	93	147
KATHERINE	NT	08	94	148
ADELAIDE	A	08	95	149
MURRAY BRIDGE	SA	08	96	150
GOOLWA	SA	08	97	151
TANUNDA	SA	08	98	152
PORT PIRIE	SA	08	99	153
WAIKERIE	SA	08	9A	154
CLARE	SA	08	9B	155
LAMEROO	SA	08	9C	156
COOBER PEDY	SA	08	9D	157
NHULUNBUY	NT	08	9E	158
KALANGADOO	SA	08	A0	160
NARACOORTE	SA	08	A1	161
BERRI	SA	08	A2	162
KEITH	SA	08	A3	163
PORT LINCOLN	SA	08	A4	164
KADINA	SA	08	A5	165
INVERELL	NN	02	A6	166
BROKEN HILL	SA	08	A7	167
NARRABRI	NN	02	A8	168
GULGONG	NN	02	A9	169
CHRISTMAS ISLAND	WO	08	AA	170
COCOS(KEELING)ISLAND	WO	08	AB	171
BROOME	WA	08	AC	172
LANCELIN	WA	08	AD	173
MARGARET RIVER	WA	08	AE	174
NEWCASTLE	NN	02	B0	176
GOSFORD	NN	02	B1	177
LISMORE NSW	NN	02	B2	178
MURWILLUMBAH	NN	02	B3	179
COFFS HARBOUR	NN	02	B4	180
GRAFTON	NN	02	B5	181
SCONE	NN	02	B6	182
SINGLETON	NN	02	B7	183
TAMWORTH	NN	02	B8	184

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Central Zone	Area	CNA	JK	ABC
ARMIDALE	NN	02	B9	185
PORT MACQUARIE	NN	02	C0	192
TAREE	NN	02	C1	193
STUARTS POINT	NN	02	C2	194
YETHOLME	NN	02	C3	195
ORANGE	NN	02	C4	196
DUBBO	NN	02	C5	197
DEEPWATER	NN	02	C6	198
COONABARABRAN	NN	02	C7	199
PARKES	NN	02	C8	200
MOREE	NN	02	C9	201
COOKTOWN	QN	07	CA	202
LIGHTNING RIDGE	NN	02	D0	208
BAIRNSDALE	VE	03	D1	209
BALLARAT	VW	03	D2	210
BENDIGO	VW	03	D3	211
HAMILTON	VW	03	D4	212
MORWELL	VE	03	D5	213
PORTLAND VIC	VW	03	D6	214
SALE	VE	03	D7	215
SEYMOUR	VE	03	D8	216
SHEPPARTON	VE	03	D9	217
CORRYONG	VE	02	DA	218
TENNANT CREEK	NT	08	DB	219
MOORA	WA	08	DC	220
BINDA	NS	02	DD	221
PORT VICTORIA	SA	08	DE	222
WANGARATTA	VE	03	E0	224
WARRAGUL	VE	03	E1	225
WARRNAMBOOL	VW	03	E2	226
MILDURA	VW	03	E3	227
ECHUCA	VW	03	E4	228
WOODEND	VW	03	E5	229
CAMPERDOWN	VW	03	E6	230
STAWELL	VW	03	E7	231
HORSHAM	VW	03	E8	232
EILDON	VE	03	E9	233
BOURKE	NN	02	EA	234
COONAMBLE	NN	02	EB	235
NYNGAN	NN	02	EC	236
QUEENSTOWN	T	03	ED	237
COBAR	NN	02	EE	238

LEGEND FOR AREAS...

QUEENSLAND NORTH	QN
QUEENSLAND SOUTH	QS
BRISBANE	B
NSW NORTH	NN
NSW SOUTH	NS
SYDNEY	S
VICTORIA EAST	VE
VICTORIA WEST	VW

MELBOURNE	M
TASMANIA	T
SOUTH AUSTRALIA	SA
ADELAIDE	A
WESTERN AUSTRALIA	WA
PERTH	P
NORTHERN TERRITORY	NT
WA OFF-SHORE	WO

Appendix B — Example of Standardised Mobile Service Area Register

SMSA	BENDIGO
JK	D3
ABC	211
CENTRAL ZONE	BENDIGO
ADJOINING ZONES	BRIDGEWATER GOORNONG HARCOURT MALDON MARONG RAYWOOD
OTHER ZONES	STRATHFIELDSAYE CASTLEMAINE RUSHWORTH

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