COMMUNICATIONS ALLIANCE LTD

INDUSTRY GUIDELINE

G629:2009

Location Independent Communications Service Location Indicator for Emergency Services Signalling Specification

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First published as ACIF G629:2006

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INTRODUCTORY STATEMENT

The *Location Independent Communications Service Location Indicator for Emergency Services Signalling* Specification (G629:2009) replaces the *Interim VoIP Location Indicator for Emergency Services Signalling* Specification (ACIF G629:2006).

The purpose of the changes are to:

- reduce or remove the use of the terms "VoIP" and "Voice over IP" and to use different terminology in their place; and

- reduce or remove possible inconsistencies between the term 'Nomadic' in ACIF G557:2007 and the term 'Location Independent Communications Service' (LICS) as used in some regulatory documents.

The *Location Independent Communications Service Location Indicator for Emergency Services Signalling* Specification (G629:2009) is designed to set out the industry procedures for the transfer of correct caller location information from LICS SPs and their respective TrSDs to the ECP for LICS calls to Emergency Service Numbers.

Nomadic Location Indicator for 000 Revision Working Committee

JUNE 2009

EXPLANATORY STATEMENT

This is the Explanatory Statement for the G629:2009 *Location Independent Communications Service Location Indicator for Emergency Services Signalling* Specification.

This Explanatory Statement outlines the purpose of this Specification (the Specification) and the factors that have been taken into account in its development.

The Specification replaces the ACIF G629:2006 *Interim VoIP Location Indicator for Emergency Services Signalling* Specification published by Communications Alliance in October 2006.

Background

Emergency Call Person (ECP) call centres can determine the location of callers to Emergency Service Numbers from Fixed Local Services (e.g. PSTN and ISDN) from a lookup of the Enhanced CLI Presentation System (ECLIPS) using Calling Line Identification (CLI) information.

However, ECP call centres cannot rely on the CLI for calls from Public Mobile Telecommunications Services (PMTS) to Emergency Service Numbers to provide a geographical reference since the caller may be anywhere in Australia. Therefore the concept of interim Mobile Location Information (MoLI) was introduced around 1996. This sends an approximate caller location to ECP call centres using the insertion of 3 digit 'ABC' codes in the I-ISUP signalling digits. These 'ABC' codes represent a Standardised Mobile Service Area (SMSA). Interim MoLI was developed in ACIF as an Industry Specification ACIF G530:1999 *MOBILE LOCATION INDICATOR FOR EMERGENCY SERVICES - Stage 1 Service Description, Interim Mobile Location Indicator* Specification and used by operators of Australian mobile Telecommunications Networks from 1999 onwards.

The usage of 'ABC' codes for providing caller location information to ECP call centres was subsequently extended to non-mobile calling origins in ACIF G557:2002 *Standardised Mobile Service Area Register* e.g. Fixed Local Services, and Satellite Services calling Emergency Service Numbers. ACIF G557:2002 was subsequently revised in 2006, 2007 & 2009 and the latest version published as G557:2009 which scopes LICS. ACIF G557 provides a standardized information format for use in the signalling of location information.

This document specifies the industry agreed approach for the 'ABC' codes to be used for providing caller location information in calls to Emergency Service Numbers from LICS.

Current Regulatory Arrangements

The Australian Communications Authority (ACA) referenced ACIF G530:1999 and ACIF G557:2002 in its Telecommunications (Emergency Call Services) Determination 2002 (the Determination) by placing a requirement upon Carriers and Carriage Service Providers (CSPs) who supply Standard Emergency Telephone Services to provide to the ECP information about the approximate location of a caller in accordance with ACIF G530:1999 and ACIF G557:2002.

The Determination has been subsequently amended and in its latest amendment on 2 November 2007, ACMA introduced the concept of LICS for two way VoIP services and outlined the obligations on LICS SPs for provision of available location information to the ECP (see ACMA URL: http://www.acma.gov.au/WEB/STANDARD/pc=PC_311111).

Where LICS Service Providers (SPs) are also Carriers or CSPs and supply a LICS that supports calls to the Emergency Service Numbers 000 or 106, they are subject to the relevant regulatory obligations of the Determination.

Australian Emergency Service Numbers are specified in the Telecommunications Numbering Plan 1997 and are currently 000, 112 & 106.

On 1 July 2005, the Australian Communications and Media Authority (ACMA) assumed the responsibilities of the ACA.

Why Current Regulatory Arrangements are inadequate

There are varied levels of awareness in the industry that specification of caller location information for LICS calls to Emergency Service Numbers was standardized as part of the revision of ACIF G557 in 2009. (In this Specification, the term "LICS call" means "a call using a LICS".)

With the growing use of LICS and emergence of new LICS SPs, there are an increasing number of LICS calls to Emergency Service Numbers that do not contain the correct caller location information as per G557:2009.

How the Specification Builds on and Enhances the Current Regulatory arrangements

This Specification builds on past industry work on the transfer of caller location information to the ECP for LICS calls to Emergency Service Numbers by providing the relevant requirements to LICS SPs and their respective Transit Service Deliverers (TrSDs).

The Specification focuses on the interim caller location information for LICS calls to Emergency Service Numbers from LICS SPs and their respective TrSDs. It provides information on the interim industry solution to provide caller location information for LICS services within Australia to assist in the routing of Emergency Calls from LICS services to the correct Emergency Service Organization (ESO) by the ECP.

What the Specification will Accomplish

The Specification sets out the interim industry procedures for the transfer of caller location information between LICS SPs and the ECP on LICS calls to Emergency Service Numbers.

This is done by incorporating the correct ABC code, in accordance with ACIF G557 requirements, in the I-ISUP signalling digits passed across the ECP Point Of Interconnection (POI).

How the Objectives will be Achieved

An increase in the transfer of the correct LICS caller location information will be achieved through implementation of this Specification by LICS SPs and their respective TrSDs.

Anticipated Benefits to Consumers

This Specification continues the support for the supply of caller location information for LICS calls to Emergency Service Numbers. This should improve consumer confidence that they will receive an appropriate response to a request for assistance from the ESOs.

Anticipated Benefits to Industry

This Specification provides a consistent approach to the transfer of caller location information for LICS calls to Emergency Service Numbers which should use less industry resources than the development of multiple approaches.

This should improve the supply of LICS caller location information to the ECP and ESOs.

Anticipated Cost to Industry

There is minimal cost to industry arising from this Specification because it represents a minor variation on the existing arrangements in G557:2009.

2009 Revision

The purpose of the changes are to:

- reduce or remove the use of the terms "VoIP" and "Voice over IP" and to use different terminology in their place; and

- reduce or remove possible inconsistencies between the term 'Nomadic' in ACIF G557:2007 and the term 'Location Independent Communications Service' as used in G557:2009 and some regulatory documents.

End of Explanatory Statement

Nomadic Location Indicator for 000 Revision Working Committee

JUNE 2009

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1 GENERAL

1.1 Introduction

1.1.1 The development of the Specification has been facilitated by the Communications Alliance through an advisory group comprised of representatives from the telecommunications industry and Government regulatory agencies.

1.1.2 The Specification should be read in the context of other relevant Communications Alliance or ACIF Codes, Specifications, Guidelines and documents, including ACIF G500 and ACIF G549, ACIF G557 and ACIF C555.

> NOTE: The 2000 versions of ACIF G500 and ACIF G549 are based upon I-ISUP signalling and are implemented in Australian Telecommunications Networks. ACIF published updated versions of ACIF G500 and ACIF G549 in 2002 but it is generally understood these have not been implemented in Australia because of the industry preference to migrate to IP based Telecommunications Networks.

1.1.3 The Specification should be read in conjunction with related legislation, including:

(a) the *Telecommunications Act 1997*;

(b) the *Telecommunications (Consumer Protection and Service Standards) Act 1999*;

(c) the *Telecommunications (Emergency Call Service) Determination 2002*; and

(d) the *Telecommunications Numbering Plan 1997*.

1.1.4 If there is a conflict between the requirements of the Specification and any requirements imposed on a LICS SP or its respective TrSD by statute, the LICS SP or its respective TrSD will not be in breach of the Specification by complying with the requirements of the statute.

1.1.5 Compliance with this Specification does not guarantee compliance with any legislation. The Specification is not a substitute for legal advice.

1.1.6 Statements in boxed text are a guide to interpretation only and not binding as Specification rules.

1.2 Reference by ACMA

The Specification may be referenced by the Australian Communications and Media Authority (ACMA). Readers should check the ACMA website (http://www.acma.gov.au/) for more information.

1.3   Scope

1.3.1   The Specification applies to LICS SPs or their respective TrSDs that:

(a)   are Carriers or CSPs; and

(b)   supply a LICS that supports Emergency Calls to the Emergency Service Numbers 000 or 106.

1.3.2   The Specification does not apply to Emergency Calls to the Emergency Service Number 112.

NOTE: 112 is a secondary emergency number for PMTS in the Telecommunications Numbering Plan 1997.

1.3.3   The Specification does not apply to Emergency Calls from a:

(a)   PMTS; or

(b)   Satellite Service; or

(c)   Fixed Local Service.

NOTE: 'ABC' codes for these services are separately defined in ACIF G557.

1.3.4   The Specification defines the caller location information to be provided to the ECP by a LICS SP or its respective TrSD by using a signalling interface across an ECP POI that:

(a)   is based on I-ISUP; and

(b)   supports LICS calls to Emergency Service Numbers

by incorporating the correct 3 digit 'ABC' code from ACIF G557 in the Service Digits (SD) passed across an ECP POI.

1.4   Objectives

The objective of the Specification is to set out the industry procedures for the transfer of correct caller location information from LICS SPs and their respective TrSDs to the ECP for LICS calls to Emergency Service Numbers.

1.5   Specification review

The Specification will be reviewed after 5 years of the Specification being published by Communications Alliance and every 5 years subsequently, or earlier in the event of significant developments that impact on the Specification or a chapter within the Specification.

2 ACRONYMS, DEFINITIONS AND INTERPRETATIONS

2.1 Acronyms

For the purposes of the Specification:

ACA

means Australian Communications Authority.

ACIF

means Australian Communications Industry Forum.

ACMA

means Australian Communications and Media Authority.

CLI

means Calling Line Identification.

CSP

means Carriage Service Provider.

ECLIPS

means Enhanced CLI Presentation System.

ECP

means Emergency Call Person.

ESO

means Emergency Service Organization.

I-ISUP

means Interconnection ISUP.

IP

means Internet Protocol.

IPND

means Integrated Public Number Database.

ISDN

means Integrated Service Digital Network.

ISUP

means ISDN User Part.

LICS

means Location Independent Communications Service.

MoLI

means Mobile Location Information.

PMTS

means Public Mobile Telecommunications Service.

POI

means Point of Interconnection.

PSTN

means Public Switched Telephone Network.

SD

means Service Digit.

SMSA

means Standardized Mobile Service Area.

SP

means Service Provider.

TrSD

means Transit Service Deliverer.

VoIP

means Voice over IP.

2.2   Definitions

For the purposes of the Specification:

Act

means the *Telecommunications Act 1997 (Cth)*.

Carriage Service Provider

has the meaning given by section 87 of the Act.

Carrier

has the meaning given by section 7 of the Act.

Determination

means the Telecommunications (Emergency Call Service) Determination 2002.

> *NOTE: ACMA is revising the Determination in 2009.*

ECP POI

means the POI between:

(a)   the ECP and a LICS SP; or

(b)   the ECP and a LICS SP's respective TrSD

using a signalling interface based upon I-ISUP.

Emergency Call

means a call made to an Emergency Service Number, seeking a response from an ESO to deal with a time-critical event:

(a)   that is perceived to threaten life; or

(b)   that the organization is established to respond to.

> *NOTE: This definition is consistent with the definition for "Emergency Call" in the Determination.*

Emergency Call Person

has the meaning given by section 7 of the Act.

> *NOTE: On the commencement of the Determination, the ECP for 000 was Telstra and the ECP for 106 was Australian Communication Exchange Limited. Calls from a LICS SP or TrSD to 000 or 106 are handed over to Telstra under existing industry arrangements.*

Emergency Service Number

has the meaning given by Part 3 of the Telecommunications Numbering Plan 1997.

Emergency Service Organization

has the meaning given by section 147(11) of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*.

Fixed Local Service

has the meaning given by the Determination.

Location Independent Communications Service

has the meaning given by the Determination.

> *NOTES:*
>
> *1. The Determination defines a location independent communications service as:*
> *"means a carriage service that:*
> *(a)   is capable of voice telephony; and*
> *(b)   for a call to the Emergency Service Number 000 or 106 — identifies a point of termination for the call; and*
> *(c)   is none of the following:*
> *(i)   a Fixed Local Service;*
> *(ii)   a PMTS;*
> *(iii)   a Satellite Service.*
>
> *2. As per ACMA URL: http://www.acma.gov.au/WEB/STANDARD/pc=PC_311111, ACMA has introduced the concept of LICS for two way VoIP services.*

Public Mobile Telecommunications Service

has the meaning given by section 32 of the Act.

Satellite Service

has the meaning given by the Determination.

Standard Emergency Telephone Service

has the meaning given by the Determination.

Telecommunications Network

has the meaning given by section 7 of the Act.

Transit POI

means the POI between a LICS SP and its respective TrSD.

> *NOTE: This choice of signalling interface at a Transit POI is subject to bilateral agreement.*

Transit Service Deliverer

means a service deliverer contracted through an interconnection agreement to provide a transit service between service deliverers.

> *NOTES:*
>
> *1. This definition is consistent with the definition for "TrSD" in ACIF G520.*
>
> *2. For the purpose of this Specification, the TrSD provides a transit service to LICS SPs for routing their Emergency Calls to the ECP.*

VoIP Service

means a voice communication service where the origination and/or the termination of the voice service is carried over an IP based Telecommunications Network.

> *NOTE:*
>
> *This definition is consistent with the definition for "VoIP Service" in CA G634.*

2.3   Interpretations

In the Specification, unless the contrary appears:

(a)   headings are for convenience only and do not affect interpretation;

(b)   a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, re-enactments or replacements of any of them;

(c)   words in the singular includes the plural and vice versa;

(d)   words importing persons include a body whether corporate, politic or otherwise;

(e)   where a word or phrase is defined, its other grammatical forms have a corresponding meaning;

(f)   mentioning anything after include, includes or including does not limit what else might be included;

(g)   words and expressions which are not defined have the meanings given to them in the Act; and

(h)   a reference to a person includes a reference to the person's executors, administrators, successors, agents, assignees and novatees.

3   REQUIREMENTS

3.1   List of 'ABC' codes for LICS

The list of 'ABC' codes for LICS from G557:2009 is in Table 1.

TABLE 1
List of 'ABC' codes for LICS from G557:2009

SMSA Name/ Collection Area	State / Territory	ABC
Location Independent Unknown	UNK	980
Location Independent ACT	ACT	981
Location Independent NSW	NSW	982
Location Independent VIC	VIC	983
Location Independent TAS	TAS	984
Location Independent NT	NT	985
UNALLOCATED	UNA	986
Location Independent QLD	QLD	987
Location Independent SA	SA	988
Location Independent WA	WA	989

NOTES:

1. 'ABC' codes for calls from offshore Australian Territories have been allocated in ACIF G557 although these are linked to specific Satellite Services e.g. Globalstar and Iridium.

2. The preferred 'ABC' code is the one that reflects the approximate location of the caller.

3.2   Routing of LICS calls to Emergency Service Numbers with 'ABC' codes

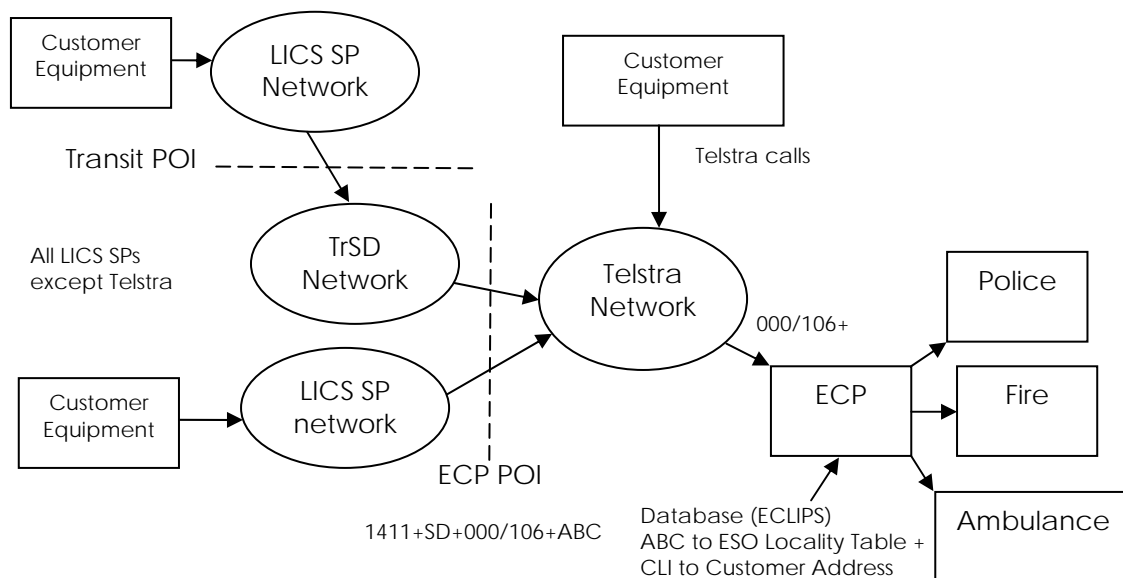3.2.1   See Figure 1 for routing of LICS calls to Emergency Service Numbers.

FIGURE 1

LICS call to Emergency Service Numbers with 'ABC' codes

3.2.2   Address Structure.

The correct called party address structure for LICS calls to Emergency Service Numbers from a LICS SP or its respective TrSD (other than Telstra as the ECP) is:

1411 + 62 + 000/106 + ABC

The correct called party address structure for LICS calls to emergency service numbers from Telstra (as it is also the ECP) is:

000/106 + ABC

where:

'1411' =   Telstra carrier access code

'62' =   SD indicating 'ABC' information is included.

'000' =   Emergency Service Number;

'106' =   Emergency Service Number

'ABC' =   3 digit code relating to caller's location as per ACIF G557.

> *NOTES:*
>
> *1. These address structures are derived from ACIF G549.*
>
> *2. Refer to ACIF G549 for definitions of SDs. SD '62' was originally defined only for "Mobile location indicator" – non-ported, non-geographic - however it has been extended for industry use with additional ABC codes for non-mobile services, including LICS services.*

3.2.3   The common inter-carrier Emergency Call address structure (i.e. 1411+2+000/106 from ACIF G549) should not be used by LICS SPs or their respective TrSDs for LICS calls to Emergency Service Numbers.

> *NOTE: Emergency Calls received with this address structure at an ECP POI are assumed not to have the 'ABC' code available and Telstra adds "990" as a default 'ABC' code for Fixed Local Service (i.e. Fixed Location Unknown) from ACIF G557 – however this does not identify that these Emergency Calls are LICS calls.*

3.3   Inclusion of 'ABC' code for LICS calls to Emergency Service Numbers

3.3.1   When a LICS SP hands over a LICS call across an ECP POI and:

(a)   the LICS call is to an Emergency Service Number; and

(b)   the LICS SP is able to identify the caller location (e.g. the state or territory in Australia)

then the LICS SP should include in the I-ISUP signalling digits the correct 'ABC' code from ACIF G557 that reflects the caller location.

> *NOTES:*
>
> *1. The 'ABC' code for a LICS call is typically in the format 98x where '98' is a LICS call identifier and 'x' is the State or Territory identifier digit.*
>
> *2. Refer to ACIF G557 for the current full list of SMSAs and 'ABC' codes.*
>
> *3. Refer to section 3.1 for a list of applicable 'ABC' codes for LICS calls (extracted from ACIF G557 at the time of publication of this Specification).*

3.3.2   When a LICS SP hands over a LICS call across an ECP POI and:

(a)   the LICS call is to an Emergency Service Number; and

(b)   the LICS SP is unable to identify the caller location

then the LICS SP should include in the I-ISUP signalling digits the 'ABC' code "980" corresponding to "Location Independent Unknown" from ACIF G557.

3.3.3   When a LICS SP hands a LICS call across a Transit POI and the LICS call is to an Emergency Service Number, then the LICS SP should provide the correct 'ABC' code from ACIF G557 to its respective TrSD in accordance with the requirements of clauses 3.3.1 and 3.3.2.

3.3.4   When a LICS SP's respective TrSD receives a LICS call from the LICS SP in accordance with clause 3.3.3 and the LICS call is to an

Emergency Service Number, the TrSD should not alter the 'ABC' code from ACIF G557 which had been provided by the LICS SP when the TrSD subsequently hands over that LICS call across an ECP POI.

3.4 IPND Provisioning

3.4.1 Refer to Appendix A for information on important considerations for IPND provisioning procedures by LICS SPs relating to LICS calls to Emergency Service Numbers.

4   REFERENCES

Publication	Title
Industry Codes	
ACIF C555:2008	Integrated Public Number Database (IPND) Data Provider, Data User and IPND Manager
Industry Guidelines	
ACIF G500:2000	Signalling System No. 7 - Interconnection ISUP
ACIF G520:2005	Local Number Portability - Network Plan
ACIF G530:1999	MOBILE LOCATION INDICATOR FOR EMERGENCY SERVICES - Stage 1 Service Description, Interim Mobile Location Indicator
ACIF G549:2000	Interconnection Implementation Plan
ACIF G557:2002	Standardised Mobile Service Area Register
ACIF G557:2007	Standardised Mobile Service Area Register
G557:2009	Standardised Mobile Service Area and Location Indicator Register
ACIF G619:2005	IPND Data
CA G634:2007	Quality of Service parameters for Voice over Internet Protocol (VoIP) services
Legislation	
Telecommunications Act 1997	
Telecommunications (Consumer Protection and Service Standards) Act 1999	
Telecommunications (Emergency Call Service) Determination 2002	
Telecommunications Numbering Plan 1997	

APPENDIX

A   IPND PROVISIONING PROCEDURES BY LICS SPs RELATING TO LICS CALLS TO EMERGENCY SERVICE NUMBERS (INFORMATIVE)

A1 Important considerations

A.1.1   The data provided to the IPND is explained in ACIF G619. Specifically, refer to:

(a)   Section 6.7 for information about CSP codes; and

(b)   Section 6.9 in relation to the alternate address flag.

A.1.2   For all LICS, the alternate address flag should be set to true.

PARTICIPANTS

The Working Committee responsible for the revisions made to this Specification consisted of the following organisations and their representatives:

Organisation	Representative
Soul Australia	Peter Vernon
SingTel Optus	James Dam
SingTel Optus	Sam Mangar
Telstra	Kandiah Arulventhan
Telstra	Guy di Paola

James Duck of Communications Alliance provided project management support.

Communications Alliance was formed in 2006 to provide a unified voice for the Australian communications industry and to lead it into the next generation of converging networks, technologies and services.

In pursuing its goals, Communications Alliance offers a forum for the industry to make coherent and constructive contributions to policy development and debate.

Communications Alliance seeks to facilitate open, effective and ethical competition between service providers while ensuring efficient, safe operation of networks, the provision of innovative services and the enhancement of consumer outcomes.

It is committed to the achievement of the policy objective of the *Telecommunications Act 1997* - the greatest practicable use of industry self-regulation without imposing undue financial and administrative burdens on industry.