

**COMMUNICATIONS
ALLIANCE LTD**



INDUSTRY GUIDELINE

G557.1:2019

Location Information for Emergency Calls

Part 1: General

G557.1:2019 Location Information for Emergency Calls Part 1: General

First published as G557.1:2014

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INTRODUCTORY STATEMENT

The **Location Information for Emergency Calls** Guideline (G557:2019) replaces the **Location Information for Emergency Calls** Guideline (G557:2014).

The purpose of the changes are to:

- Make an editorial update to Part 1; and
- Add requirements for Advanced Mobile Location (i.e. in part 6).

G557 consists of the following parts under the general title **Location Information for Emergency Calls**:

- *Part 1: General (this document);*
- *Part 2: Standardised Mobile Service Area and Location Indicator Register (previously G557:2009);*
- *Part 3: Location Independent Communications Service Location Indicator for Emergency Services Signalling (previously G629:2009);*
- *Part 4: Mobile Location Information (MOLI) Processes For Emergency Calling And Rescue Coordination (previously G643:2012);*
- *Part 5: Push Mobile Location Information (MOLI) Interface To Enhanced Calling Line Identification System (ECLIPS); and*
- *Part 6: Advanced Mobile Location (AML).*

The **Location Information for Emergency Calls** Guideline (G557:2019) is designed to:

- group together a number of existing Guidelines and Specifications of location information for emergency calling.

Michael Ryan
Chair

Advanced Mobile Location Inter Carrier Interface Working Committee

DECEMBER 2019

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1 GENERAL

1.1 Introduction

- 1.1.1 The development of the Guideline has been facilitated by Communications Alliance through a Working Committee comprised of representatives from the telecommunications industry.
- 1.1.2 The Guideline should be read in the context of other relevant Industry Codes, Standards and Guidelines and documents.
- 1.1.3 The Guideline should be read in conjunction with related legislation and regulatory arrangements, including:
 - (a) the *Telecommunications Act 1997 (Cth)* (the Act);
 - (b) *Telecommunications (Consumer Protection and Service Standards) Act 1999 (Cth)* (TCPSS); and
 - (c) the *Telecommunications (Emergency Call Service) Determination 2009* (the Determination).
- 1.1.4 If there is a conflict between the requirements of the Guideline and any requirements imposed on a Carrier or CSP by statute, the Carrier or CSP will not be in breach of the Guideline by complying with the requirements of the statute.
- 1.1.5 Compliance with this Guideline does not guarantee compliance with any legislation. The Guideline 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 Regulatory Arrangements

The Guideline is referenced by the Australian Communications and Media Authority (ACMA) under the Determination.

1.3 Scope

- 1.3.1 The Guideline applies to the following sections of the telecommunications industry as defined in section 110 of the Act:
 - (a) Carriers; and
 - (b) Carriage Service Providers (CSPs).
- 1.3.2 The Guideline applies to the Emergency Call Person (ECP for 000 and 112).
- 1.3.3 It deals with the following telecommunications activities as defined in section 109 of the Act:
 - (a) carrying on business as a Carrier; or

- (b) carrying on business activities as a CSP; or
 - (c) supplying Goods or Service(s) for use in connection with the supply of a Listed Carriage Service.
- 1.3.4 It deals with the provision of Emergency Call services, a telecommunications activity as defined in Part 8 of the TCPSS.
- 1.3.5 This Part of the Guideline is an Index for the subsequent parts of G557.

1.4 Objectives

The objectives of the Guideline are:

- (a) to define the Standardised Mobile Service Areas (SMSAs) and their corresponding 3 digit 'ABC' codes for use in the signalling of caller location for Emergency Calls;
- (b) to specify the industry procedures for the transfer of correct caller location information from CSPs supplying a Location Independent Communications Service (LICS) and their respective Transit Service Deliverers to the ECP for Emergency Calls;
- (c) to describe the "Pull" processes to be used by Mobile Carriers to provide the Mobile Location Information (MoLI) of an Active Mobile Customer Equipment (CE) to an Emergency Service Organisation (ESO) or the Australian Maritime Safety Authority in response to an authorised request about an Emergency Call;
- (d) to define an interface for the transfer of Push MoLI between a Mobile Carrier and the ECP for 000 and 112 originating from a CE that communicates with the macro Base Transceiver Station (BTS) of a Mobile Carrier while the Emergency Call is in progress; and
- (e) to specify the arrangements for the transfer of an AML short message between Mobile Carriers and the ECP for 000 and 112 when received from International Mobile Telecommunications (IMT) CE in accordance with DR AS/CA S042.1:2019 and associated with Emergency Calls to 000 and 112.

<p><i>NOTE: At the time of publication of this Guideline, AS/CA S042.1:2018 is being revised to include AML.</i></p>
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1.5 Guideline review

The Guideline will be reviewed 5 years after publication, or earlier in the event of significant developments that affect the Guideline or a chapter within the Guideline.

2 ACRONYMS, DEFINITIONS AND INTERPRETATIONS

2.1 Acronyms

For the purposes of the Guideline:

ACMA

means the Australian Communications and Media Authority.

BTS

means Base Transceiver Station.

CE

means Customer Equipment.

CSP

means Carriage Service Provider.

ECLIPS

means Enhanced Calling Line Identification Processing System.

ECP

means Emergency Call Person.

ESO

means Emergency Service Organisation.

IMT

means International Mobile Telecommunications.

LICS

means Location Independent Communications Service.

MoLI

means Mobile Location Information.

PMTS

means Public Mobile Telecommunications Service.

SMSA

means Standardised Mobile Service Area.

2.2 Definitions

For the purposes of the Guideline:

Act

means the *Telecommunications Act 1997 (Cth)*.

Active Mobile CE

Means a mobile CE that is turned on and has been correctly authenticated on a network used to supply a PMTS.

Carriage Service Provider

has the meaning given by section 87 of the Act.

Carrier

has the meaning given by section 7 of the Act.

Customer Equipment

has the meaning given by section 21 of the Act.

Determination

means the *Telecommunications (Emergency Call Service) Determination 2019*.

Enhanced Calling Line Identification Processing System

means the system used by the ECP for Emergency Calls to 000 and 112 to extract CLI associated with an Emergency Call.

Emergency Call

has the meaning given by the Determination.

Emergency Call Person

has the meaning given by section 7 of the Act.

Emergency Call Person for 000 and 112

has the meaning given by the Determination.

Emergency Service Organisation

has the meaning given by the Determination.

International Mobile Telecommunications

has the meaning given by AS/CA S042.1.

International Mobile Telecommunications CE

has the meaning given by AS/CA S042.1

Location Independent Communications Service

has the meaning given by the Determination.

Mobile Location Information

means information that is available about the approximate location of the CE of an end user on a PMTS.

Mobile Carrier

means a controlled network or controlled facility used to supply a public mobile telecommunications service.

Public Mobile Telecommunications Service

has the meaning given by section 32 of the Act.

Push MoLI

has the meaning given by Part 5 of G557.

Transit Service Deliverer

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

2.3 Interpretations

In the Guideline, 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 INDEX INFORMATION

3.1 Introduction

G557 consists of the following parts under the general title Location Information for Emergency Calls:

- (a) Part 1: **General** (this document);
- (b) Part 2: **Standardised Mobile Service Area and Location Indicator Register** (previously G557:2009);
- (c) Part 3: **Location Independent Communications Service Location Indicator for Emergency Services Signalling** (previously G629:2009);
- (d) Part 4: **Mobile Location Information (MOLI) Processes For Emergency Calling And Rescue Coordination** (previously G643:2012);
- (e) Part 5: **Push Mobile Location Information (MoLI) Interface To Enhanced Calling Line Identification System (ECLIPS)**; and
- (f) Part 6: **Advanced Mobile Location (AML)**.

3.2 The Parts of G557

- 3.2.1 Part 2 is a pack of 5 compressed files that define the SMSAs for use in the signalling of caller location and 2 spreadsheets containing the SMSAs and their corresponding 3 digit 'ABC' codes for caller location. The 5 compressed files were prepared in MapInfo™ and you will need relevant software to be able to read/view the files. For those unable to view map files there are also some spreadsheets with summary information available from the G557 webpage (refer to the list of References for a link).
- 3.2.2 Part 3 specifies the industry procedures for the transfer of correct caller location information from CSPs supplying a LICS and their respective Transit Service Deliverers to the ECP for Emergency Calls.
- 3.2.3 Part 4 describes the "Pull" processes to be used by Mobile Carriers to provide the MoLI of an Active Mobile CE to an ESO or the Australian Maritime Safety Authority in response to an authorised request about an Emergency Call.
- 3.2.4 Part 5 defines an interface for the transfer of Push MoLI between a Mobile Carrier and the ECP for 000 and 112 originating from a CE that communicates with the macro BTS of a Mobile Carrier while the Emergency Call is in progress.

- 3.2.5 Part 6 specifies the arrangements for the transfer of an AML short message between Mobile Carriers and the ECP for 000 and 112 when received from CE in accordance with DR AS/CA S042.1:2019 and associated with calls in Australia to 000 and 112.

NOTE: At the time of publication of this Guideline, AS/CA S042.1:2018 is being revised to include AML.

3.3 The use and interpretation of location information

In these Guidelines and Specifications, unless the contrary appears:

- (a) the location information is derived from information obtained from the CE or networks or facilities of a Carrier or CSP in the delivery of Emergency Calls to the ECP.
- (b) the location information represents an estimate with limited accuracy by the CE or networks or facilities of a Carrier or CSP of the approximate geographic location with an area of uncertainty of the CE used by a caller to make an Emergency Call.
- (c) the availability, accuracy and area of uncertainty of the location information provided by each network or facility of a Carrier or CSP is dependent on (but is not limited to) its design, age, construction, operation, equipment, network architecture or geographic configurations, number of cell towers and technologies.
- (d) consideration must be given by the user of the location information that not all networks or facilities of a Carrier or CSP use the same geographic mapping methodologies, mathematical algorithms or the interpretation of international standards in order to estimate with limited accuracy a CE's approximate physical location with an area of uncertainty.
- (e) users of this location information must not use, interpret or treat the provision of the location information as an "absolute" physical location of the CE but should instead use this location information in conjunction with all available location information (including the service address from the integrated public number database) and the information, where available, provided by the emergency caller.
- (f) The provision of AML under Part 6 is a relatively new technology development with very few operator deployments globally at time of publication. There remains a possibility that under some circumstances that AML location information may either not be available or is less precise than the SMSA information provided under Part 2 during AML's introduction period in Australia due to a variety of technical and operational factors.
- (g) Depending on the specific Emergency Call scenario, one or more of the procedures described in the different parts of G557 may be applicable. In the specific case of PMTS originated Emergency Calls, SMSA Indicators (G557.2), "Pull" MoLI (G557.4), Push MoLI (G557.5) and AML (G557.6) may all apply.

- (h) Where AML, Push MoLI and SMSA information is provided for an Emergency Call:
- a. The AML information is expected to provide a more precise location than Push MoLI and SMSA information;
 - b. The Push MoLI information is expected to provide a more precise location than SMSA information;
 - c. The SMSA indicator provided may be used as a secondary point of reference; and
 - d. If there is found to be inconsistency between the AML and Push Moll and SMSA information, then it is recommended that the ECP for 000 and 112 and ESOs make use of all available location information, including that from the caller, to make an estimate of the caller location.
 - e. The ECP and/or ESO should report the Push MoLI location area inconsistency to the Mobile Carrier as a fault;
 - f. The Mobile Carrier should review the reported inconsistency and where appropriate, apply correction to its underlying systems or databases.

4 REFERENCES

Publication	Title
Australian Standard	
DR AS/CA S042.1:2019	Requirements for connection to an air interface of a Telecommunications Network - Part 1: General http://commsalliance.com.au/Documents/all/Standards/s042.1 NOTE: At the time of publication of this Guideline, AS/CA S042.1:2018 was being updated to include requirements on AML.
Industry Guidelines and Specifications	
G557	Location Information for Emergency Calls http://commsalliance.com.au/Documents/all/guidelines/g557
G557.1:2019	Part 1: General
G557.2:2014	Part 2: Standardised Mobile Service Area and Location Indicator Register
G557.3:2017	Part 3: Location Independent Communications Service Location Indicator for Emergency Services Signalling
G557.4:2014	Part 4: Mobile Location Information (MOLI) Processes For Emergency Calling And Rescue Coordination
G557.5:2014	Part 5: Push Mobile Location Information (MoLI) Interface To Enhanced Calling Line Identification Processing System (ECLIPS)
G557.6:2019	Part 6: Advanced Mobile Location
Legislation and Regulation	
<i>Telecommunications Act 1997</i> http://www.comlaw.gov.au/Series/C2004A05145	
<i>Telecommunications (Emergency Call Service) Determination 2019</i> https://www.legislation.gov.au/Series/F2019L01509	

PARTICIPANTS

The Working Committee that developed the Specification consisted of the following organisations and their representatives:

Organisation	Membership	Representative
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Optus	Voting	James Dam
Optus	Non-voting	Sam Mangar
Optus	Non-voting	Chris Mezentsef
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Telstra	Non-voting	Michael Ryan
Telstra	Non-voting	Kirk Pascoe
Vodafone Hutchison Australia	Voting	Angus Clearie
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This Working Committee was chaired by Michael Ryan. James Duck of Communications Alliance provided project management support.

Communications Alliance was formed in 1997 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.



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