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CALEA Suite of Standards
for
**Traditional Paging
Advanced Messaging, and
Ancillary Services**

Version 1.3

PCIA Paging Technical Committee
CALEA Subcommittee
24 May, 2000

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Foreword

In this suite of documents, the Personal Communications Industry Association (PCIA) Paging Technical Committee defines the specifications for interface compatibility requirements between paging service providers (PSPs) and law enforcement agencies (LEAs).

The Communications Assistance for Law Enforcement Act (CALEA)¹ was enacted on October 25, 1994. CALEA requires telecommunications carriers to ensure that their equipment, facilities, or services have the capability to:

- (1) "expeditiously ... isolate and enable the government to intercept all communications in the carrier's control to or from the equipment facilities or services of a subscribe[r], concurrently with the communications' transmission, or at any later time acceptable to the government;"
- (2) "expeditiously ... isolate and enable the government to access reasonably available call identifying information about the origin and destination of communications;"
- (3) "make intercepted communications and call identifying information available to government in a format available to the carrier so they may be transmitted over lines or facilities leased or procured by law enforcement to a location away from the carrier's premises;" and
- (4) "meet these requirements with a minimum of interference with the subscriber's services and in such a way that protects the privacy of communications and call identifying information that are not targeted buy [sic] electronic surveillance orders, and that maintains the confidentiality of the government's wiretaps."²

Under CALEA, industry associations and standards-setting bodies are authorized to adopt standards for satisfying these assistance capability requirements. Telecommunications carriers, manufacturers, and/or support service providers that comply with these standards have "safe harbor" and are deemed in compliance with CALEA's capability requirements:

"a telecommunications carrier shall be found to be in compliance with the assistance capability requirements under section 103, and a manufacturer of telecommunications transmission or switching equipment or a provider of telecommunications support services shall be found in compliance with section 106, if the carrier, manufacturer, or support service provider is in compliance with publicly available technical requirements or standards adopted by an industry association or standard-setting organization. ..."³

In November 1997, an Interim Standard (J-STD-025) for wireline and wireless telephony⁴ was adopted by the Telecommunications Industry Association Subcommittee TR45.2 and Committee T1 of the Alliance for Telecommunications Industry Solutions. Shortly thereafter, in December 1997, a working group was established under the auspices of PCIA to

¹ Communications Assistance for Law Enforcement Act, Pub. L. No 103-414 (CALEA).

² Telecommunications Carrier Assistance to the Government, H. Rep. No. 103-827, at 22 (October 4, 1994).

³ CALEA, § 107.

⁴ Lawfully Authorized Electronic Surveillance, TIA/ATIS, Interim/Trial Use Standard (J-STD-025)

determine whether J-STD-025 was readily applicable to paging technology and, if not, to develop a separate standard for the paging industry. After carefully reviewing J-STD-025, the working group determined that J-STD-025's telephony specifications were predicated on a telephony switch of much greater complexity and capability than the limited telephony switches available to PSPs and, as such, was not readily applicable to paging technology and that a separate standard was necessary.

In order to expedite the standards-setting process, the PCIA Paging Technical Committee decided to develop a Suite of Standards and release this Suite of Standards in three parts: 1) Traditional Paging⁵, 2) Advanced Messaging⁶, and 3) Ancillary Services⁷. Based on market data available⁸ during the development of these Standards, the committee elected to prioritize the development in the order given above. The Traditional Paging Standard defines compliance for one-way paging services with fixed geographic coverage areas. The Advanced Messaging Standard defines compliance for subscriber defined on-demand roaming, forwarding and redirection, two-way and acknowledged voice paging, and real-time wireless packet data services. The Ancillary Services Standard defines compliance for caller/subscriber bridging, outdial, and one-number services. Any PSP, manufacturer, or service provider that complies with these Standards will have "safe harbor" under section 107 of CALEA and will be found in compliance with CALEA's assistance capability requirements.

In April 2000, at the request of law enforcement (represented by the Federal Bureau of Investigation's CALEA Implementation Section), the PCIA Paging Technical Committee modified this Suite of Standards to incorporate two capabilities – voice mail and location – that previously had not been addressed by these standards. The PCIA Paging Technical Committee recognizes that there are significant questions about whether a PSP is obligated to provide either capability under CALEA (especially voice mail, which has historically been treated by the Federal Communications Commission as an "information service").⁹ However, as good corporate citizens with a long history of cooperation with law enforcement, the PCIA Paging Technical Committee wished to provide a standardized approach by which PSPs could provide these capabilities to law enforcement. Although a PSP may not be obligated to provide these two capabilities, a PSP that complies with the standardized approaches described in this "safe harbor" Suite of Standards shall be deemed in compliance with any obligations that may exist under CALEA.

Standards can not be developed in the absence of capacity considerations. In order to prepare these Standards, the committee had to develop a working set of capacity assumptions. These assumptions are defined in the annex to this Suite. This annex is informative only and is not a part of this standard.

⁵ Standard 1, CALEA Specification for Traditional Paging, v1.3

⁶ Standard 2, CALEA Specification for Advanced Messaging, v1.3

⁷ Standard 3, CALEA Specification for Ancillary Services, v1.3

⁸ Based on list of top 29 Paging Carriers published by RCR on October 27, 1997.

⁹ Inclusion of these two capabilities in this Suite of Standards is not a concession by the Personal Communications Industry Association or any of its member companies that either capability is required by CALEA.

Document Change Record

v1.0	04 May, 1998	First release of document.
v1.1		Not released
v1.2	19 February, 1999	Aligned Ancillary Services definitions in Foreword and Section 1 with Ancillary Services Standard 3. Added Market Share prioritization note in last paragraph of Foreword. Added Capacity annex and reference in Foreword. Inserted missing Advanced Messaging and Ancillary Services definitions in Glossary. Fixed miscellaneous formatting issues and email addresses.
v1.3	24 May, 2000	Added text concerning the addition of Voice Message Retrieval Systems and Location.

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Introduction

In this suite of documents, the PCIA Paging Technical Committee defines the specifications for interface compatibility requirements between PSPs and LEAs.

In November 1997, an Interim Standard (J-STD-025) for wireline and wireless telephony was adopted by the Telecommunications Industry Association Subcommittee TR45.2 and Committee T1 of the Alliance for Telecommunications Industry Solutions. Shortly thereafter, in December 1997, a working group was established under the auspices of PCIA to determine whether J-STD-025 was readily applicable to paging technology and, if not, to develop a separate standard for the paging industry. After carefully reviewing J-STD-025, the working group determined that J-STD-025's telephony specifications were predicated on a telephony switch of much greater complexity and capability than the limited telephony switches available to PSPs and, as such, was not readily applicable to paging technology and that a separate standard was necessary.

In order to expedite the standards-setting process, the PCIA Paging Technical Committee decided to develop a Suite of Standards and release this Suite of Standards in three parts: 1) Traditional Paging, 2) Advanced Messaging, and 3) Ancillary Services. Any PSP, manufacturer, or service provider that complies with these Standards will have "safe harbor" under section 107 of CALEA and will be found in compliance with CALEA's assistance capability requirements.

In April 2000, at the request of law enforcement (represented by the Federal Bureau of Investigation's CALEA Implementation Section), the PCIA Paging Technical Committee modified this Suite of Standards to incorporate two capabilities – voice mail and location – that previously had not been addressed by these standards. The PCIA Paging Technical Committee recognizes that there are significant questions about whether a PSP is obligated to provide either capability under CALEA (especially voice mail, which has historically been treated by the Federal Communications Commission as an "information service"). However, as good corporate citizens with a long history of cooperation with law enforcement, the PCIA Paging Technical Committee wished to provide a standardized approach by which PSPs could provide these capabilities to law enforcement.

In some instances, the paging services to which certain intercept subjects subscribe may permit a PSP to access and deliver communications and reasonably available call-identifying information without the PSP having to modify its networks or systems. In these instances, the PSP may be fully compliant with the assistance capability requirements set forth in CALEA. For example, an LEA could effect a central office- or local loop-based interception using conventional methods of access and delivery without the involvement of the PSP. Another example is the PSP could assist the LEA in setting up a clone or duplicate of the subject's receiving device so that the LEA could monitor the subject's call content through the radio channel transmissions.

Purpose

In this suite of documents, the PCIA Paging Technical Committee defines the specifications for interface compatibility requirements between PSPs and LEAs.

Any PSP, manufacturer, or service provider that complies with this Suite of Standards will have "safe harbor" under section 107 of CALEA and will be found in compliance with CALEA's assistance capability requirements.

Scope

The scope of this Suite of Standards is to define the services to support LAES and the interface between a PSP and an LEA.

How This Suite Of Standards Document Is Organized

This Suite of Standards is organized around the three separate areas of Paging-related communications: 1) Traditional Paging, 2) Advanced Messaging, and 3) Ancillary Services. The sections addressing each of these are:

Foreword provides an overview of this Suite of Standards.

Document Change Record provides revision control for this Suite of Standards.

Introduction defines the purpose, scope, and organization of this Suite of Standards.

References defines a list of the references used in the preparation of this Suite of Standards.

Glossary defines the words, acronyms, and initialisms that are used in this Suite of Standards.

Annex 1 Capacity defines the committee-developed working set of capacity assumptions.

Standard 1 CALEA Specification for Traditional Paging defines the Traditional Paging LAES services, network entities, and information flows to implement Traditional Paging LAES services.

Standard 2 CALEA Specification for Advanced Messaging defines the Advanced Paging and Packet Data LAES services, network entities, and information flows to implement Advanced Messaging LAES services.

Standard 3 CALEA Specification for Ancillary Services defines the Ancillary Services LAES services, network entities, and information flows to implement Ancillary Services LAES services.

References

CALEA Standard for Traditional Paging, v1.3, 24 May, 2000
(http://www.pcia.com/calea_specs_v1p3.zip)

CALEA Standard for Advanced Messaging, v1.3, 24 May, 2000
(http://www.pcia.com/calea_specs_v1p3.zip)

CALEA Standard for Ancillary Services, v1.3, 24 May, 2000
(http://www.pcia.com/calea_specs_v1p3.zip)

Communications Assistance for Law Enforcement Act, Pub. L. No. 103-414

Telecommunications Carrier Assistance to the Government, H. Rep. No. 103-827

Lawfully Authorized Electronic Surveillance, TIA/ATIS, Interim/Trial Use Standard (J-STD-025)

Glossary

Note: Definitions may vary in each of the referenced PCIA CALEA Standards documents.

Advanced Messaging

Advanced Messaging services include such services as subscriber defined on-demand roaming, forwarding and redirection, two-way and acknowledged voice paging, and wireless packet data services. Advanced messaging optionally supports voice message retrieval services.

Ancillary Services

Ancillary Services include caller/subscriber bridging, outdial, and one-number services.

CALEA

Communications Assistance for Law Enforcement Act.

call content

see *content*.

call-identifying information

is defined in CALEA Section 102 (2) to be "dialing or signaling information that identifies the origin, direction, destination, or termination of each communication generated or received by a subscriber by means of any equipment, facility, or service of a [PSP]."

clone radio receiving device

a radio receiving device, provided by the LEA, that is pre-programmed by the PSP as authorized by a lawful authorization with the intercept subject's radio receiving address and set to monitor the subject's radio receiving frequency with the express purpose of decoding and capturing the subject's call content when used within the subject's fixed geographical broadcast area. A clone radio receiving device has the same characteristics and call content reception and processing features as the intercept subject's radio receiving device.

Commission

defined in CALEA Section 102 (3) to be "the Federal Communications Commission".

communication

in this Standard, communication refers to any wire or electronic communication, as defined in 18 USC 2510.

content

is defined in 18 USC 2510 (8) to be "when used with respect to any wire or electronic communications, includes any information concerning the substance, purport, or meaning of that communication."

electronic surveillance

the statutory-based legal authorization, process, and associated technical capabilities and activities of LEAs related to the interception of wire, oral, or electronic communications while in transmission.

government

defined in CALEA Section 102 (5) to be "the government of the United States and any agency or instrumentality thereof, the District of Columbia, any commonwealth, territory, or possession of the United States, and any State or political subdivision thereof authorized by law to conduct electronic surveillance."

intercept

defined in 18 USC 2510 (4) to be "the aural or other acquisition of the content of any wire, electronic, or oral communication through the use of any electronic, mechanical, or other device."

LAES

Lawfully Authorized Electronic Surveillance

Law Enforcement Agency

a government entity with the legal authority to conduct electronic surveillance.

Lawful Authorization

no intercepts shall take place without specific lawful authorization. One Lawful Authorization may encompass multiple devices and/or multiple geographic locations.

LEA

see *Law Enforcement Agency*.

Location

defined as the imprecise geographic coverage area toward which outbound messages are transmitted by the PSP's infrastructure or from which inbound messages are received from wireless devices. Location specificity and precision vary widely from system to system and from message to message.

paging service provider¹⁰

defined from CALEA Section 102 (8) to be, "a person or entity engaged in the transmission or switching of wire or electronic communications as a common carrier for hire, and includes 1) a person or entity engaged in providing commercial mobile service, or 2) a person or entity engaged in providing wire or electronic communications switching or transmission service to the extent that the Commission finds such service is a replacement for a substantial portion of local telephone exchange service and that it is in the public interest to deem such a person or entity to be a [PSP] for purposes of this title. This does not include 1) persons or entities insofar as they are engaged in providing information services, and 2) any class or category of [PSPs] that the Commission exempts by rule after consultation with the U. S. Attorney General."

PSP

see *Paging service provider*.

PSTN

Public Switched Telephone Network

Traditional Paging

traditional paging supports the one-way wireless transmission of tone-only, numeric, alphanumeric, and voice messages from a PSP to one or more radio receiving devices within a stipulated, predefined geographic radio coverage area of the PSP's infrastructure. Traditional Paging optionally supports voice message retrieval services.

transmission

the act of transferring communications from one location or another by wire, radio, electromagnetic, photoelectronic, or photo-optical system.

USC

United States Code.

¹⁰ This Suite of Standards uses the term *paging service provider* instead of the CALEA term *telecommunication carrier*.

voice mail

see *Voice Message Retrieval Service*

Voice Message Retrieval Service

Defined as a service option which permits callers to deposit voice messages into storage files within the PSP's infrastructure such that subscribers may retrieve these stored voice messages at a later time. Voice messages may be entered and/or retrieved (played-back) via the PSTN.

wire communications

defined in 18, USC 2510 (1) to be "any aural transfer made in whole or in part through the use of facilities for the transmission of communications by the aid of wire, cable, or other like connection between the point of origin and the point of reception (including the use of such connection in a switching station) furnished or operated by any person engaged in providing or operating such facilities for the transmission of interstate or foreign communications or communications affecting interstate or foreign commerce and such term includes any electronic storage of such communication."

