Glossary

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.

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

Audio Delivery Point for LEA(s)
The Audio Delivery Point for LEA(s) is the PSP-maintained audio interface between the PSP Infrastructure and the LEA-provided transport function to the LEA-provided CALEA Interface.

Bridge
As interpreted by this Standard for ancillary services, a bridge is the interconnection of two or more audio paths to allow the passing of audio information from one path to one or more of the others.

CALEA
CALEA is the acronym for Communications Assistance for Law Enforcement Act.

call completion
As interpreted by this Standard for ancillary services, call completion is defined as the establishment of the bridge of the audio paths carrying the called and calling party audio within the PSP Infrastructure. If the audio paths are not bridged within the PSP Infrastructure, then the call is considered to be not completed and will not be reported.

call content
see *content*.

called party
The called party is the destination party in an ancillary service regardless of origination.

Caller/Subscriber Bridging Services
Caller/Subscriber Bridging Services generate a real time audio connection between an initiating calling party and an identified PSP subscriber called party using the PSP infrastructure to connect the calling and called parties.

call-identifying information
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]." As interpreted for caller/subscriber bridging services by this Standard for ancillary services: *destination* is the radio receiving or transceiving device address to which a call is being made and the number or address from which the bridged call is being returned (e.g., called party); *direction* is the transmission path from the calling number or address to the called number or address; *origin* is the number or address of the party initiating the call (e.g., calling party); and *termination* is the alternate number or address to which a call is being routed, if applicable (e.g., forwarded party). As interpreted for outdial services by this Standard for ancillary services: *destination* is the number or address of the party receiving the call (i.e., called party), *direction* is the transmission path from the intercept subject's calling number or address to the called number or address, *origin* is the address of the intercept subject's radio transceiving device and the number or address from which the bridged call is being made (i.e., the calling party), and *termination* is the same as *Destination*. For these caller/subscriber

bridging services, reasonably available call-identifying information is that information used in the Home Node for call processing and will be provided at both the beginning and end of the call. Reasonably available call-identifying information generally consists of the address of the subject's radio receiving or transceiving device(s) and, if appropriate, the address to which the message has been forwarded or redirected. The call origin and bridged call return are not reasonably available in most PSP installations but may be obtained through the originating service provider (e.g., EC, ISP). For these outdial services, reasonably available call-identifying information is that information used in the Home Node for call processing and will be provided at both the beginning and end of the call. Reasonably available call-identifying information generally consists of the address of the subject's radio receiving or transceiving device(s) and the destination number or address. The bridged call origin is not reasonably available in most PSP installations but may be obtained through the originating service provider (e.g., EC, ISP).

calling party
The calling party is the originating party in an ancillary service regardless of destination.

capcode
Capcode is the radio address decoder element in each radio device that permits the radio device to be selectively identified and signaled over a common radio channel. Colloquially, this term is used to generically identify the radio device's radio signaling scheme address in this Specification for advanced messaging even though different radio signaling scheme technologies may use similar but different names for the same function.

channel
Channel is an independent path for communicating between two points.

clone radio receiving device
A clone radio receiving device is 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
Commission is defined in CALEA Section 102 (3) to be "the Federal Communications Commission".

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

communication intercept
see *intercept*.

compression
Compression is a method or methods for reducing the bandwidth or number of bits needed to encode information or encode a signal. Algorithms used may be 'lossless' which allows recovery of all information content or 'lossy' which does not allow recovery of all information content.

connection
Connection is a relationship between two or more parties of a call to allow communication between them.

content

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." As interpreted by this Standard for ancillary services, call content covers the notification tone-only, numeric, alphanumeric, binary data, and voice message page content and the bridged audio content. When used in caller/subscriber bridging and outdial services, the bridged audio content is common to both the calling party, in caller/subscriber bridging services, or called party, in outdial services, and the Intercept Subject.

coverage area

Coverage area is the geographic region throughout which radio receiving and/or transceiving devices can be expected to reliably send communication to and/or receive communication from the PSP Infrastructure

Data Delivery Point for LEA(s)

The Data Delivery Point for LEA(s) is the PSP-maintained AMI protocol interface between the PSP Infrastructure and the LEA-provided transport function to the LEA-provided CALEA Interface.

Delivery Action

For ancillary services, the Delivery Action is responsible for delivering intercepted communications expeditiously from the PSP Infrastructure Data Delivery Point for LEA(s) and Audio Delivery Point for LEA(s) for use by one or more LEA-Provided CALEA Interfaces (up to a total of five per intercept subject).

destination

see *call-identifying information*

Destination.vcf

Destination.vcf is a vCard-formatted file containing identification information pertaining to the destination of a message.

direction

see *call-identifying information*

EC

see *Exchange Carrier.*

electronic surveillance

Electronic surveillance is 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.

encoding

Encoding is the process of converting voice signals into a format suitable for transmission.

encryption

Encryption is the process of changing the format of the information content of a message or message routing information such that external observers will not be able to interpret correctly the content or routing information.

Exchange Carrier

Exchange Carrier is the wireline PSTN carrier interface provider. Exchange carriers may take the form of a local exchange carrier or an interexchange carrier.

External Messaging Function

External Messaging Function is the delivery of messages to and from wireline carrier sources (e.g., EC, ISP) to the PSP Infrastructure.

functional entity

Functional entity is a system or subsystem capable of providing a defined service.

government

Government is 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."

Home Node

Home Node is the PSP Infrastructure network node that encompasses subscriber database records and those functions needed to route messages between the appropriate Input Node(s) and the RF Network or other Input Nodes.

HTTP

HyperText Transfer Protocol is a set of protocols used to transfer information on the WWW.

IETF

Internet Engineering Task Force is the technical body responsible for developing and maintaining protocols related to the Internet.

IMC

Internet Mail Consortium (http://www.imc.org/) is the standards development organization responsible for developing and maintaining many mail and identification formats and protocols (e.g., vCard®).

inbound message

Inbound messages are transmitted by the radio transceiving device to the radio transceiving device's Home Node within the PSP network. These messages may be destined for external wireline addresses, other wireless devices, or the PSP system.

Information Service

Information Service is defined in CALEA Section 102 (6) to be "(A) the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunication; and (B) includes -- (i) a service that permits a customer to retrieve stored information from, or file information for storage in, information storage facilities; (ii) electronic publishing; and (iii) electronic messaging services; but (C) does not include any capability for a [PSP's] internal management, control, or operation of its telecommunication network."

Input Node

Input Node is the PSP Infrastructure network node that encompasses those functions needed to deliver messages to and from wireline carrier sources (e.g., EC, ISP).

intercept

Intercept is 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."

intercept subject

Intercept subject is a paging or wireless packet data service subscriber whose call content and reasonably available call-identifying information have been authorized by a court to be intercepted and delivered to an LEA.

Internet Service Provider

Internet Service Provider is the wireline Internet carrier interface provider.

IrDA®

InfraRed Data Association (http://www.irda.org/) is the standards development organization responsible for developing and maintaining many infrared-based communications protocols and for extending the IMC's identification formats and protocols (e.g., vCard®) to cover RF technologies.

ISP
see *Internet Service Provider*.

LAES
LAES is an initialism for Lawfully Authorized Electronic Surveillance.

Law Enforcement Administrative Function
Law Enforcement Administrative Function is responsible for controlling LEA electronic surveillance functions, for providing the LEA-Provided CALEA Interface and the associated Delivery Function link(s) to the PSP Infrastructure for receiving the messaging traffic of the subject of a lawful authorization, and for capturing and processing of the delivered call content and reasonably available call-identifying information. The Law Enforcement Administrative Function is the responsibility of the LEA. Other functions of the Law Enforcement Administrative Function are beyond the scope of this standard.

Law Enforcement Agency
Law Enforcement Agency is a government entity with the legal authority to conduct electronic surveillance.

Lawful Authorization
Lawful Authorization is the legal entity required to authorize a CALEA intercept. No intercepts shall take place without specific lawful authorization. One Lawful Authorization may encompass multiple devices and/or multiple geographic locations.

Lawful Authorization Action
Lawful Authorization Action is the serving of the Lawful Authorization to the PSP by the LEA.

LEA
see *Law Enforcement Agency*.

MIME
MIME is an acronym for Multipurpose Internet Mail Extensions which is a set of specifications designed to extend the usefulness of Internet mail.

Notification Page
Notification Page is a page or other alerting message sent to notify the paging or wireless packet data subscriber that a caller/subscriber bridging service transaction is pending.

One-Number Services
One-Number Services support the linking of a number of disparate communications methods in order to find and utilize the most effective communications method available to reach the intended subscriber.

Origin
see *call-identifying information*.

Origin.vcf
Origin.vcf is a vCard-formatted file containing identification information pertaining to the origin of a message.

outbound messages
Outbound messages are transmitted to the radio receiving or transceiving device from the radio receiving or transceiving device's Home Node within the PSP Infrastructure. These messages may originate from external wireline sources, other wireless devices, or the PSP Infrastructure.

Outdial Services
Outdial Services provide a PSP subscriber with the ability to use the PSP infrastructure to originate telephone calls from within the PSP infrastructure to telephones or other telephony devices outside of the PSP infrastructure.

Output Node

Output Node is that portion of the PSP Infrastructure RF Network node that encompasses those functions needed to encode and deliver messages to and from wireless carrier sources (e.g., radio transceiving devices) using RF transmitters and, in two-way advanced messaging systems, RF receivers.

Paging or Wireless Packet Data Service Provider[11]

Paging or Wireless Packet Data Service Provider is 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."

Provision Action

Provision Action is responsible for enabling and disabling activation of the interface to the LEA-Provided CALEA Interface Function as required to receive the call content and reasonably available call-identifying information described in the Lawful Authorization. For ancillary services, the Provision Action includes the ability to unobtrusively make the call content and reasonably available call-identifying information available to the delivery action and to protect (i.e., prevent unauthorized access, manipulation, and disclosure) intercept controls and intercepted call content and reasonably available call-identifying information consistent with PSP security policies and practices. The Provision Action establishes the interface and controls between the LEA and the PSP for the purpose of intercepting messaging traffic as specified by a Lawful Authorization.

PSDN

PSDN is an initialism for Public Switched Data Network.

PSP

see *Paging or Wireless Packet Data Service Provider.*

PSP Administration Function

PSP Administration Function is responsible for controlling the Provision, enabling the Delivery Actions, and maintaining the Data Delivery Point for LEA(s) and Audio Delivery Point for LEA(s). Other functions of the PSP Administrative Function are beyond the scope of this standard.

PSP Infrastructure

PSP Infrastructure embodies the Home Node central control switch(es), RF Network of Output Node(s), RF transmitter(s), and RF receiver(s), and Input Node wireline interconnect(s) that connect the radio network to the PSTN, PSDN, the World Wide Web, and other land-based facilities to allow ancillary services calls between the subscriber and a calling party, in caller/subscriber bridging services, or a called party, in outdial services.

PSP Infrastructure Function

PSP Infrastructure Function is the switching and radio transmission network of the PSP. For this Standard, the PSP Infrastructure is responsible for the collection and delivery of call content and reasonably available call-identifying information of one or more lawfully authorized intercept subject(s).

---

[11] This Standard uses the term *paging or wireless packet data service provider* instead of the CALEA term *telecommunication carrier.*

PSTN
PSTN is an initialism for Public Switched Telephone Network.

Release
To place facilities used for connection in the idle state where they can be used for other connections.

RF
RF is an initialism for Radio Frequency.

RF Network
RF Network is the PSP Infrastructure network node that encompasses those functions needed to deliver messages to and from wireless carrier sources (e.g., radio transceiving devices). The RF Network includes RF transmitters and Output Node encoders and, in two-way advanced messaging systems, RF receivers.

RF receiver
RF receiver is a component in the PSP Infrastructure's RF Network which receives and translates radio-based communications from the subject radio device to wireline-based communications.

RF transmitter
RF transmitter is a component in the PSP Infrastructure's RF Network which receives and translates wireline-based communications to radio-based communications and transmits the radio-based communications to the subject radio device.

RFC
RFC is an initialism for Request For Comment and represents the protocol specifications produced by the IETF.

signaling scheme
Signaling scheme is the radio signaling protocol used to deliver messages to specific radio receiving devices. Radio signals radiated by base station transmitters are encoded with radio receiving device capcode and message content information. These signaling schemes may utilize analog (e.g., 2-tone, 5/6-tone) or digital (e.g., POCSAG, Golay Sequential Code®, FLEX™, ERMES, ReFLEX™, InFLEXion™, DataTAC™) modulating techniques with the transmitted information organized in accordance with any of several formats which specify such parameters as transmission rate, structure of the information, and error control mechanisms.

SMTP
SMTP is an initialism for Simple Mail Transport Protocol and represents the protocol specifications produced by the IETF for simple internet email.

Subject Radio Device Function
Subject Radio Device Function is responsible for collecting and interpreting and, where applicable, encoding and disbursing communications for the intercept subject.

subscriber
Subscriber is the entity subscribing to the services provided by the PSP.

Termination.vcf
Termination.vcf is a vCard-formatted file containing identification information pertaining to the termination of a message.

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 Infrastructure.

termination
see *Call-Identifying Information.*

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

unobtrusive
Unobtrusive in this context is not undesirably noticeable or blatant; inconspicuous; within normal call variances.

USC
USC is an initialism for United States Code.

vCard®
vCard® is an IMC-defined file format containing identification information.

wire communications
Wire communications is 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."

wireless
Wireless, in this Standard, refers to traditional paging and advanced messaging services.

wireline
Wireline, in this Standard, refers to traditional wire-based telephone and packet data services.

World Wide Web
World Wide Web is an application running on an ad hoc global network that has been defined to provide communications between a wide range of people, places, and things.

WWW
see World Wide Web.

Annex 1 Examples

The following annex is informative only and is not a part of this standard.

Several ancillary services scenarios are described in this annex. The intent of the annex is to provide representative examples of how such communications *might* be intercepted and the appropriate information conveyed to the LEA under this standard. This annex is not intended as an exhaustive set of examples. The scenarios contained in this annex are informative only. PSPs may provide access using configurations and accesses not shown. PSPs are not obligated to implement particular services or features in the way illustrated in these exemplary scenarios.

For the purposes of illustrating the following examples, the PSP referenced will be known as "JBD Wireless Services" with a home node in "Slippery Rock, SD". The LEA will be known as "LEA1" and the Lawful Authorization identification number will be "PI314159265".

A1 1. Caller/Subscriber Bridging Services Examples With Notification Pages Sent To Radio Devices

The following examples are provided to illustrate typical caller/subscriber bridging services with notification pages sent to radio devices.

A1 1.1 Intercept Subject using Traditional Paging's Predefined Geographical Coverage

This is a simple example using notification page techniques covered by Standard 1 - CALEA Specification for Traditional Paging.

A1 1.1.1 Transaction Flow:

- LEA (LEA1) presents a Lawful Authorization for an intercept to the PSP (JBD Wireless Services).
- PSP determines that the intercept subject has traditional paging features and programs the LEA-provided clone radio receiving device with the intercept subject's capcode.
- PSP does not receive *origin* call-identifying information.
- PSP receives a 'calling party' request for a caller/subscriber bridge for the intercept subject.
- PSP sends the notification page to the PSP's RF infrastructure.
- The RF infrastructure broadcasts the notification page in the intercept subject's predefined geographical coverage area.
- Both the subject and the clone radio receiving device receive the call content of the message at the same time.
- Intercept subject 'called party' calls into the PSP Infrastructure using one of the PSP Infrastructure's predefined access numbers without *destination* call-identifying information and requests access to the bridge.
- PSP Infrastructure bridges the 'calling party' and the 'called party'.
- PSP sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface and opens the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

- On the PSP Infrastructure's release of the bridged audio path between the 'calling party' and the 'called party', the PSP closes the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) and sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

A1 1.1.2 AMI-Delivered Information

Since this is an example of a traditional paging application, there is no AMI Data Transfer for the notification page.

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge completion.

AMI Data Transfer - Caller/Subscriber Bridge Completion:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:23 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3035551212
X-PCIA-AUDIO;AUDIOSTATUS=1:1
UID:257
END:VCARD
(mandatory blank line)
--content--
```

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge release.

AMI Data Transfer - Caller/Subscriber Bridge Release:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:19:51 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
```

(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3035551212
X-PCIA-AUDIO;AUDIOSTATUS=0:1
UID:257
END:VCARD
(mandatory blank line)
--content--

A1 1.2 Intercept Subject Using Advanced Messaging's Subscriber Defined On-Demand Roaming

This example illustrates the transaction flow and AMI-delivered information in which a notification page is sent to an intercept subject who has redefined the available coverage area in which messages shall be sent.

A1 1.2.1 Transaction Flow:

- LEA (LEA1) presents a Lawful Authorization for an intercept to the PSP (JBD Wireless Services).
- PSP determines that the intercept subject has advanced messaging features and sets up monitoring within the PSP Infrastructure.
- PSP does not receive *origin* call-identifying information.
- PSP receives a 'calling party' request for a caller/subscriber bridge for the intercept subject.
- PSP sends the notification page to the PSP Infrastructure's RF Network.
- PSP sends an AMI protocol message with this notification page call content from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- PSP RF Network broadcasts the notification page in the intercept subject's current geographical coverage area.
- Intercept subject 'called party' calls into the PSP Infrastructure using one of the PSP Infrastructure's predefined access numbers without *destination* call-identifying information and requests access to the bridge.
- PSP Infrastructure bridges the 'calling party' and the 'called party'.
- PSP sends an AMI protocol message with this call identifying information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface and opens the AMI-indicated bridged audio path #2 on the Audio Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- On the PSP Infrastructure's release of the bridged audio path between the 'calling party' and the 'called party', the PSP closes the AMI-indicated bridged audio path #2 on the Audio Delivery Point for LEA(s) and sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

A1 1.2.2 AMI-Delivered Information

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the notification page.

AMI Data Transfer - Notification Page from the PSP to the Radio Receiving Device:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:23 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
```

(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3125551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/plain; charset=us-ascii
(mandatory blank line)
[actual text content]
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge completion.

AMI Data Transfer - Caller/Subscriber Bridge Completion:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:53 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3125551212
X-PCIA-AUDIO;AUDIOSTATUS=1:2
UID:515
END:VCARD
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge release.

AMI Data Transfer - Caller/Subscriber Bridge Release:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:22:27 GMT

```
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3125551212
X-PCIA-AUDIO;AUDIOSTATUS=0:2
UID:515
END:VCARD
(mandatory blank line)
--content--
```

A1 1.3 Intercept Subject Forwards to Alternate Radio Receiving Device

This example illustrates the transaction flow and AMI-delivered information in which a notification page is sent to an intercept subject who has defined an alternate destination to which messages shall be sent.

A1 1.3.1 Transaction Flow:

- LEA (LEA1) presents a Lawful Authorization for an intercept to the PSP (JBD Wireless Services).
- PSP determines that the intercept subject has advanced messaging features and sets up monitoring within the PSP Infrastructure.
- PSP does not receive *origin* call-identifying information.
- Intercept subject has implemented forwarding to an alternate radio receiving device PIN.
- PSP receives a 'calling party' request for a caller/subscriber bridge for the intercept subject and forwards to alternate radio receiving device PIN.
- PSP sends the notification page to the PSP Infrastructure's RF Network for delivery to the alternate radio receiving device.
- PSP sends an AMI protocol message with this notification page call content and alternate address from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- PSP RF Network broadcasts the notification page in the alternate radio receiving device's geographical coverage area.
- 'Called party' calls into the PSP Infrastructure using one of the PSP Infrastructure's predefined access numbers with *destination* call-identifying information and requests access to the bridge.
- PSP Infrastructure bridges the 'calling party' and the 'called party'.
- PSP sends an AMI protocol message with this call identifying information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface and opens the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- On the PSP Infrastructure's release of the bridged audio path between the 'calling party' and the 'called party', the PSP closes the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) and sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

A1 1.3.2 AMI-Delivered Information

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the notification page.

AMI Data Transfer - Notification Page from the PSP to the Radio Receiving Device:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:23 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
```

Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:5125551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="termination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:Jane Q. Public
TEL;PAGER:5615553535
END:VCARD
(mandatory blank line)
--content
Content-Type: text/plain; charset=us-ascii
(mandatory blank line)
[actual text content]
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge completion.

AMI Data Transfer - Caller/Subscriber Bridge Completion:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:53 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:5125551212
X-PCIA-AUDIO;AUDIOSTATUS=1:1

UID:7734
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="termination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:Jane Q. Public
TEL;PAGER:5615553535
TEL:5615551212
END:VCARD
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge release.

AMI Data Transfer - Caller/Subscriber Bridge Release:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:15:22 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:5125551212
X-PCIA-AUDIO;AUDIOSTATUS=0:1
UID:7734
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="termination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:Jane Q. Public
TEL;PAGER:5615553535
TEL:5615551212
END:VCARD
(mandatory blank line)

--content--

A1 1.4 Intercept Subject Using Advanced Messaging's Radio Transceiving Device

This example illustrates the transaction flow and AMI-delivered information in which a notification page is sent to an intercept subject who has an advanced messaging radio transceiving device to which messages shall be sent.

A1 1.4.1 Transaction Flow:

- LEA (LEA1) presents a Lawful Authorization for an intercept to the PSP (JBD Wireless Services).
- PSP determines that the intercept subject has advanced messaging features and sets up monitoring within the PSP Infrastructure.
- PSP receives *origin* call-identifying information.
- PSP receives a 'calling party' request for a caller/subscriber bridge for the intercept subject.
- PSP sends the notification page to the PSP Infrastructure's RF Network.
- PSP sends an AMI protocol message with this notification page call content from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- PSP RF Network broadcasts the notification page in the intercept subject's last known geographical coverage area.
- PSP RF Network receives acknowledgment message from the intercept subject's radio transceiving device.
- PSP RF Network sends the acknowledgment message to the PSP Home Node of the intercept subject.
- PSP sends an AMI protocol message with this acknowledgment message call content from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- Intercept subject 'called party' calls into the PSP Infrastructure using one of the PSP Infrastructure's predefined access numbers with *destination* call-identifying information and requests access to the bridge.
- PSP Infrastructure bridges the 'calling party' and the 'called party'.
- PSP sends an AMI protocol message with this call identifying information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface and opens the AMI-indicated bridged audio path #2 on the Audio Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- On the PSP Infrastructure's release of the bridged audio path between the 'calling party' and the 'called party', the PSP closes the AMI-indicated bridged audio path #2 on the Audio Delivery Point for LEA(s) and sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

A1 1.4.2 AMI-Delivered Information

The following two data transfers are sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the notification page.

AMI Data Transfer #1 - Notification Page from the PSP to the Radio Transceiving Device:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
```

From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:23 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:not available
TEL:5055551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:9175551212
UID:733456
END:VCARD
(mandatory blank line)
--content
Content-Type: text/plain; charset=us-ascii
(mandatory blank line)
[actual text content]
(mandatory blank line)
--content--

AMI Data Transfer #2 - Inbound Acknowledgment from the Radio Transceiving Device to the PSP:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:56 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 345
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD

VERSION:2.1
N:John Q. Public
TEL;PAGER:9175551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:System
UID:733456
END:VCARD
(mandatory blank line)
--content
Content-Type: text/plain; charset=us-ascii
(mandatory blank line)
[actual text content]
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge completion.

AMI Data Transfer - Caller/Subscriber Bridge Completion:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:14:13 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:not available
TEL:5055551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public

TEL;PAGER:9175551212
X-PCIA-AUDIO;AUDIOSTATUS=1:2
UID:601231
END:VCARD
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for the caller/subscriber bridge release.

AMI Data Transfer - Caller/Subscriber Bridge Release:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:54:02 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 225
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:not available
TEL:5055551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:9175551212
X-PCIA-AUDIO;AUDIOSTATUS=0:2
UID:601231
END:VCARD
(mandatory blank line)
--content--

A1 2. Outdial Services Example

The following example is provided to illustrate a typical transaction flow and AMI-delivered information for outdial services.

A1 2.1 Transaction Flow:

- LEA (LEA1) presents a Lawful Authorization for an intercept to the PSP (JBD Wireless Services).
- PSP determines that the intercept subject has ancillary services features and sets up monitoring within the PSP Infrastructure.
- PSP receives *origin* call-identifying information.
- PSP receives a request from the intercept subject 'calling party' to place an outdial services call to a specific 'called party' number.
- PSP places the outdial services call to the specified 'called party'.
- Called party answers the outdial services call.
- PSP Infrastructure bridges the 'calling party' and the 'called party'.
- PSP sends an AMI protocol message with this call identifying information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface and opens the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.
- On the PSP Infrastructure's release of the bridged audio path between the 'calling party' and the 'called party', the PSP closes the AMI-indicated bridged audio path #1 on the Audio Delivery Point for LEA(s) and sends an AMI protocol message with this call identifying and audio activity status information from the PSP's Data Delivery Point for LEA(s) for reception by the LEA-Provided CALEA Interface.

A1 2.2 AMI-Delivered Information

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for outdial completion.

AMI Data Transfer - Outdial Completion:

```
POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:13:23 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 353
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3145551212
```

TEL:5055551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N: not available
TEL:3055551212
X-PCIA-AUDIO;AUDIOSTATUS=1:1
UID:1191
END:VCARD
(mandatory blank line)
--content--

The following data transfer is sent via the AMI protocol from the PSP's Data Delivery Point for LEA(s) for outdial release.

AMI Data Transfer - Outdial Release:

POST /cgi-bin/process_ami.asp HTTP/1.1
Host: www.LEA1.gov
From: PI314159265@Slippery_Rock.JBD.com
Date: Sun, 15 Jun 1998 18:19:09 GMT
MIME-Version: 1.0
Content-Type: multipart/mixed; boundary=--content
Content-Length: 353
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="origin.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N:John Q. Public
TEL;PAGER:3145551212
TEL:5055551212
END:VCARD
(mandatory blank line)
--content
Content-Type: text/x-vcard; charset=us-ascii; name="destination.vcf"
(mandatory blank line)
BEGIN:VCARD
VERSION:2.1
N: not available
TEL:3055551212
X-PCIA-AUDIO;AUDIOSTATUS=0:1
UID:1191

END:VCARD
(mandatory blank line)
--content--

A1 3. One-Number Services Example

No examples are provided to illustrate a typical transaction flow and AMI-delivered information for one-number services. All one-number services are simply referrals to other services (e.g., Advanced Messaging's two-way paging, Outdial Services) and, as such, merely reflect the examples already given in the Standards for Ancillary Services and Advanced Messaging.

Annex 2 LEA-Provided CALEA Interface Examples

The following annex is informative only and is not a part of this standard.

Transport from the Data Delivery Point and Audio Delivery Point is the responsibility of the LEA(s) and is not a part of this standard. However, several potential LEA-Provided CALEA Interface examples for Advanced Messaging and Ancillary Services are described in this annex. The intent of the annex is to provide representative examples of how such communications *might* be conveyed to the LEA under this standard using readily available hardware and software and, where noted, specialized software. This annex is not intended as an exhaustive set of examples. The scenarios contained in this annex are informative only. LEAs may provide access using configurations and accesses not shown. Neither PSPs nor LEAs are obligated to implement particular services or features in the way illustrated in these exemplary scenarios.

A2 1. Advanced Messaging - Single PC with Dedicated Link

The following Advanced Messaging intercept example is provided to illustrate a typical single PC-based interface residing at a remote LEA-chosen location with a dedicated link to the PSP Infrastructure Data Delivery Point for LEA(s) as shown in Figure #1.

The PSP Infrastructure Data Delivery Point for LEA(s) uses PPP for the delivery transport. There is no PSP Infrastructure Audio Delivery Point for LEA(s) since no Ancillary Services are involved.

The requirements placed on and information flows through the LEA-Provided CALEA Interface are very simple.

1. The portion of the LEA-Provided CALEA Interface residing at the PSP Infrastructure location may consist of a modem with a dedicated TCP/IP link to the remote LEA-chosen location PC. Security is provided by nature of the dedicated link. (Alternatively, a dial-up PPP link may also be used but is not explored in these examples.)
2. The PC residing at the remote LEA-chosen location may be a simple Windows® 98 Operating System or later machine running Personal Web Server, supplied as part of the Windows® Operating System, as the collection mechanism for the data presented by the Data Delivery Point to LEA(s). Sufficient hard disk drive space must be allocated for the Personal Web Server to be able to save intercepts to disk.

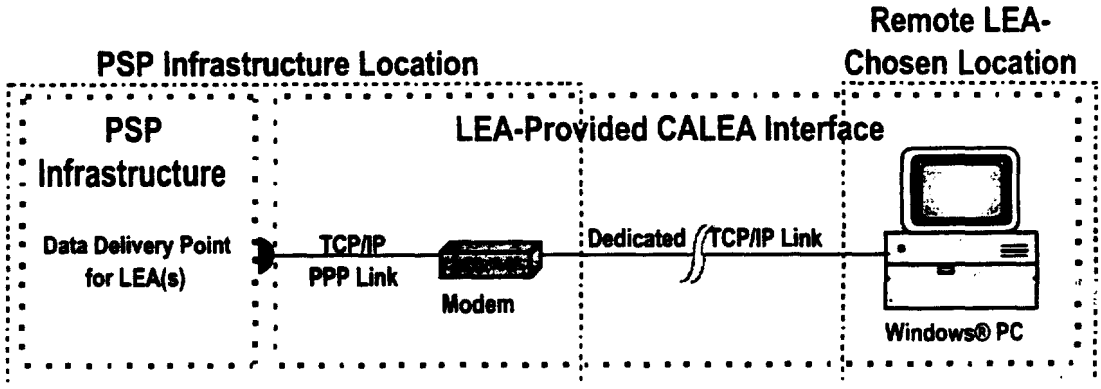

Figure A2 1: Advanced Messaging - Single PC with Dedicated Link

A2 2. Advanced Messaging - Single PC with Long Distance ISP Links

The following Advanced Messaging intercept example is provided to illustrate a typical single PC-based interface residing at a remote LEA-chosen location with ISP-based long distance links to the PSP Infrastructure Data Delivery Point for LEA(s) as shown in Figure #2.

The PSP Infrastructure Data Delivery Point for LEA(s) uses PPP for the delivery transport. There is no PSP Infrastructure Audio Delivery Point for LEA(s) since no Ancillary Services are involved.

The requirements placed on and information flows through the LEA-Provided CALEA Interface are very simple.

1. The portion of the LEA-Provided CALEA Interface residing at the PSP Infrastructure location may consist of a modem connected between the PSP Infrastructure Data Delivery Point for LEA(s) and a dedicated TCP/IP link to an ISP local to the PSP Infrastructure. Security is provided by nature of the dedicated link.
2. The ISP local to the PSP Infrastructure provides an Internet connection to an ISP local to the remote LEA-chosen location. Security is not an issue between these two ISPs.
3. The ISP local to the remote LEA-chosen location provides an Internet connection to the remote LEA-chosen location PC. Security is provided through the use of SSL between the ISP local to the PSP Infrastructure and the remote LEA-chosen location PC.
4. The PC residing at the remote LEA-chosen location may be a simple Windows® 98 Operating System or later machine running Personal Web Server, supplied as part of the Windows® Operating System, as the collection mechanism for the data presented by the Data Delivery Point to LEA(s). Sufficient hard disk drive space must be allocated for the Personal Web Server to be able to save intercepts to disk.

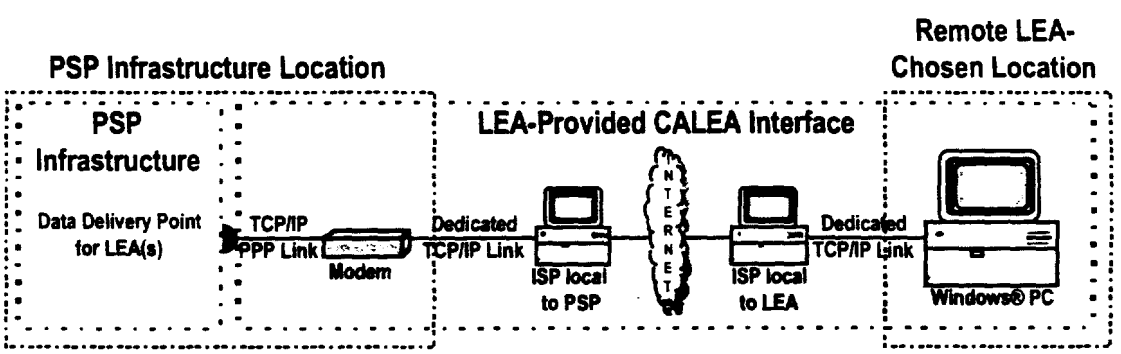

Figure A2 2: Advanced Messaging - Single PC with Long Distance ISP Links

A2 3. Ancillary Services - Single PC with Dedicated Links

The following Ancillary Services intercept example is provided to illustrate a typical single PC-based interface residing at a remote LEA-chosen location with a dedicated link to the PSP Infrastructure Data Delivery Point for LEA(s) and a dedicated link to the PSP Infrastructure Audio Delivery Point for LEA(s) as shown in Figure #3.

The PSP Infrastructure Data Delivery Point for LEA(s) uses PPP for the delivery transport. The PSP Infrastructure Audio Delivery Point for LEA(s) consists of one standard balanced 600 Ohm analog audio path.

The requirements placed on and information flows through the LEA-Provided CALEA Interface are very simple.

1. The portion of the LEA-Provided CALEA Interface residing at the PSP Infrastructure location may consist of a modem connected between the PSP Infrastructure Data Delivery Point for LEA(s) and a dedicated TCP/IP link to the remote LEA-chosen location PC and may consist of a dedicated telephony link connected between the PSP Infrastructure Audio Delivery Point for LEA(s) and the remote LEA-chosen location. Security is provided by nature of the dedicated links.
2. The PC residing at the remote LEA-chosen location may be a simple Windows® 98 Operating System or later machine running Personal Web Server, supplied as part of the Windows® Operating System, as the collection mechanism for the data presented by the Data Delivery Point to LEA(s) and special software. Special software is used to capture the PSP Infrastructure Audio Delivery Point for LEA(s) bridged audio present on the dedicated telephony link using a modem with VoiceMail capability, correlate the associated data with the captured bridged audio, and save the correlated information to the PC's hard disk drive. Sufficient hard disk drive space must be allocated for the Personal Web Server and special software to be able to save intercepts to disk.

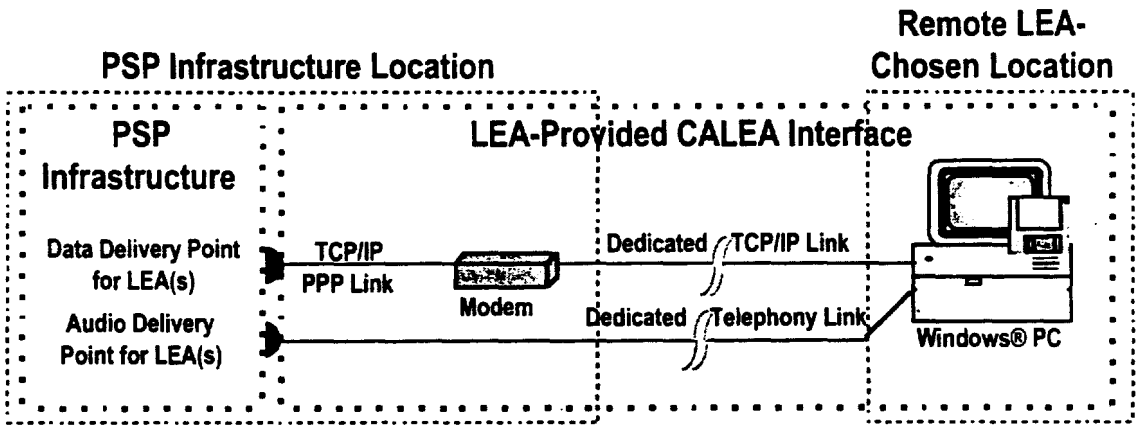

Figure A2 3: Ancillary Services - Single PC with Dedicated Links

A2 4. Ancillary Services - Dual PCs with Dedicated Links

The following Ancillary Services intercept example is provided to illustrate a typical dual PC-based set of interfaces where one PC resides at the PSP Infrastructure location, a second PC resides at the remote LEA-chosen location, and ISP-based long distance links are used for interconnect as shown in Figure #4.

The PSP Infrastructure Data Delivery Point for LEA(s) uses EtherNet for the delivery transport. The PSP Infrastructure Audio Delivery Point for LEA(s) consists of one standard balanced 600 Ohm analog audio path.

The requirements placed on and information flows through the LEA-Provided CALEA Interface are simple.

1. The PC residing at the PSP Infrastructure location may be a simple Windows® 98 Operating System or later machine running special software to capture the data presented by the PSP Infrastructure Data Delivery Point to LEA(s) and the audio presented by the PSP Infrastructure Audio Delivery Point for LEA(s), combine the data and audio, and transmit the combined data and audio on a high speed Internet connection to the ISP local to the PSP Infrastructure location. The capture of the PSP Infrastructure Data Delivery Point to LEA(s) data may be handled by an EtherNet interface card while the capture of the PSP Infrastructure Audio Delivery Point to LEA(s) audio may be handled by a modem with VoiceMail capability. Sufficient hard disk drive space must be allocated for the Personal Web Server and special software to be able to save intercepts to disk. The combined data and audio is transmitted via high speed dedicated TCP/IP link to an ISP local to the PSP Infrastructure. Security is provided by nature of the dedicated link.
2. The ISP local to the PSP Infrastructure provides a high speed Internet connection to an ISP local to the remote LEA-chosen location. Security is not an issue between these two ISPs.
3. The ISP local to the remote LEA-chosen location provides a high speed Internet connection to the remote LEA-chosen location PC. Security is provided through the use of SSL between the ISP local to the PSP Infrastructure and the remote LEA-chosen location PC.
4. The PC residing at the remote LEA-chosen location may be a simple Windows® 98 Operating System or later machine running Personal Web Server, supplied as part of the Windows® Operating System, as the collection mechanism for the data presented by the PSP Infrastructure Data Delivery Point to LEA(s). Special software is used to capture the PSP Infrastructure Audio Delivery Point for LEA(s) bridged audio present on the same link as the PSP Infrastructure Data Delivery Point to LEA(s) data, correlate the associated data with the captured bridged audio, and save the correlated information to the PC's hard disk drive. Sufficient hard disk drive space must be allocated for the Personal Web Server and special software to be able to save intercepts to disk.

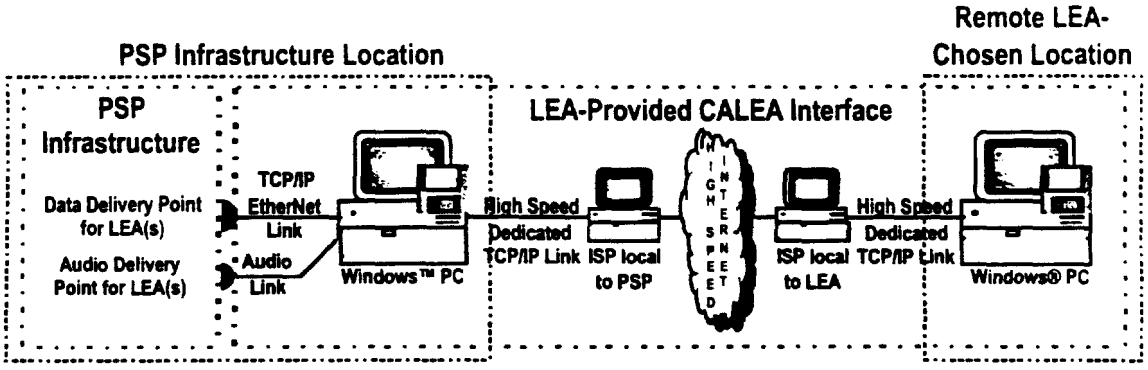

Figure A2 4: Ancillary Services - Dual PCs with Dedicated Links