



WELCOME TO VOICESTREAM!

Dear Law Enforcement Professional,

VoiceStream Wireless Corporation unifies the wonders of modern wireless communications into a single, economical and convenient system that is light years ahead of wireline and traditional cellular technologies. The Global System for Mobile Communications (GSM) technology deployed by VoiceStream is currently available in over 144 countries throughout the world. This wireless telecommunications standard incorporates sophisticated encryption algorithms and other advanced technical attributes that ensure unsurpassed privacy and virtually eliminate fraud due to "cloning." VoiceStream recognizes that these features, while highly prized by our customers, can complicate the varied strategies used by criminal investigators. Indeed, these characteristics highlight the need for law enforcement/carrier cooperation.

VoiceStream is committed to efficiently assisting the law enforcement community with all lawfully authorized activities. Our Law Enforcement Relations Group is staffed by personnel who are well-acquainted with the technical and evidentiary needs of federal, state and local prosecutors and investigative officers. The unit maintains a proactive philosophy by offering educational presentations, reference materials and expedient, secure procedures that support the mission of the public safety community in an unparalleled fashion. As an example, this **Law Enforcement Reference** has been designed to clarify those elements of VoiceStream's services that are of greatest interest to law enforcement practitioners.

If you have any questions related to this guide or the services available to the law enforcement community, please contact VoiceStream's Law Enforcement Relations Group at (973) 872-5711.

Sincerely,

MICHAEL S. MCADOO
Manager, LER Group

NOTICE

The information contained in this reference guide is of a sensitive nature. Distribution is restricted to bona-fide law enforcement personnel strictly in support of their official duties.

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1.0 INTRODUCTION



VoiceStream is an industry leader in a revolutionary new concept called PCS - Personal Communications Services. PCS means a whole new network and new advanced handset technology with amazing capabilities - combining the services of an answering machine, pager, fax and e-mail into one. PCS avoids the high costs and service limitations of existing cellular technology. In fact, the federal government authorized the new frequencies for PCS networks to generate increased competition in wireless communications networks and promote lower-cost, higher quality service.

GSM - the Global System for Mobile communications - is the world's leading digital wireless standard, already being used by nearly 290 million people in nearly 144 countries. GSM offers users unparalleled features and privacy.

VoiceStream is working with leading manufacturers to provide a wide choice of GSM handsets, including Ericsson, Motorola, Mitsubishi, and Nokia. Currently, there are 12 active GSM networks throughout North America. Because GSM is used throughout the world, VoiceStream customers are able to roam in Europe and parts of Asia.

With most phones, you can only make or receive voice calls. That's it. Some may offer a few features, like Call Waiting or Call Forwarding. But VoiceStream gives you a host of convenient features that add efficiency and productivity.

We've bundled our features into affordable packages to meet today's communications needs. Advanced features include:

- Answering Machine
- Numeric Paging
- Short e-mail
- Information Services - Handset Delivered
- Alphanumeric Paging
- Caller ID
- Call Waiting
- Call Forwarding
- Voice Dial
- Call Restriction
- Group Voice Mail & Intelligent Voice Mail
- Data and Fax Transfer
- Fax Mail
- Global Roaming
- Direct-Dial International Calling

Put simply, we're revolutionizing wireless communication by providing an advanced, completely digital, wireless service that is light years ahead of traditional cellular technology.

2.0 GSM TERMINOLOGY

2.1 Introduction

Wireless carriers deploying the Global System for Mobil communications (GSM) technology refer to a common set of acronyms and identifiers. Many terms commonly used in the conventional analog (AMPS) environment have no equivalent in GSM networks. When investigative information is sought from VoiceStream, use of the correct terminology is critical.

2.2 Essential GSM Terms

IMSI
pronounced
"im'-zee"
International Mobile Subscriber Identity Number
The only identifier uniquely associated with a wireless subscriber in the international GSM environment. The 15-digit number contains components which identify the Mobile Country Code (MCC), Mobile Network Code (MNC) and Mobile Subscriber Identity Number (MSIN).

Example: **310160215031658**

310 = Mobile Country Code (USA)
160 = Mobile Network Code (VoiceStream)
215031658 = Mobile Subscriber Identity Number

MSISDN
pronounced
"mizz'-den"
Mobile Subscriber Integrated Services Digital Network
The mobile telephone number assigned to a GSM subscriber by the home carrier. In the United States the MSISDN adheres to the North American Numbering Plan; a 10-digit number including an area code (NPA), exchange (NXX) and four final digits.

Example: **(201) 757-2911**

Outside of the United States the MSISDN usually conforms to the numbering plan utilized in the "home" country. For example, the mobile telephone number of a GSM subscriber in Berlin, Germany might be: 30-872121.

SIM Card
Subscriber Identity Module Card
Generally, a SIM card must be installed in a GSM handset in order to facilitate wireless calls. The SIM card electronically stores data related to the subscriber, including the IMSI, option settings, "speed dial" list and PIN codes.

GSM handsets are designed to accept SIM cards in one of two standard sizes. The full-size SIM is similar in size to that of a credit card. The mini or "plug-in" SIM card measures approximately 1" x ½" and is simply a punched-out portion of a full-size SIM card. Both are identical in terms of the information stored within the card.

SIM Card
(continued)



Plug-in SIM (rear)

Plug-in SIM (front)

A SIM **serial number** may appear on either size card

IMEI
pronounced
"eye'-me"

International Mobile Equipment Identifier

The only identifier uniquely associated with a handset in the international GSM environment. The 15-digit number contains components which identify the Type Approval Code (TAC), Final Assembly Code (FAC), Serial Number (SNR) and a single, spare digit. The IMEI generally appears on a sticker on the handset and is electronically stored within the firmware of the handset.

Example: 010008521959410 or 010008-52-195941-0

Note: On many GSM handsets the IMEI can be displayed by pressing the following keypad sequence: * # 0 6 #

If the source of an IMEI is a VoiceStream handset, it *may* be possible to identify the first VoiceStream subscriber account associated with that handset.



Ericsson RF380 WAP-Enabled Handset

3.0 SUBPOENA PROCEDURE

3.1 General Subpoena Information

VoiceStream Wireless Corporation has established procedures for expeditiously accommodating subpoenas and/or court orders served by law enforcement and other authorized governmental agencies.

Subpoenas for subscriber identifying information or call detail records which may be demanded pursuant to 18 U.S.C. §2703 (and/or applicable state statute) are processed by the Law Enforcement Relations Group. This group processes subpoena responses for all VoiceStream market areas (including the former market areas covered by Omnipoint Communications Inc. and Aerial Communications) and the area served by our joint venture with D&E Communications; **“PCS One.”**

Our procedures minimize the number of persons involved in response preparation and ensure prompt compliance. Under normal circumstances VoiceStream returns the subpoenaed information within fifteen (15) business days. Requests for historical call detail records (those over three (3) months old), require significantly greater retrieval and preparation time.

3.2 Procedure - Service via Facsimile (Fax)

VoiceStream does not require “in-person” or documented service of court orders or subpoenas upon a designated employee or corporate representative. *There is no requirement for an original or “hard copy” document to follow via regular mail.* That option is left to the discretion of the investigative or judicial agency. VoiceStream will honor valid subpoenas and/or court orders which are delivered to the Law Enforcement Relations Group via facsimile transmission. When deemed necessary, a member of the Law Enforcement Relations Group will confirm the validity of an informational request before a response is prepared.

Fax all subpoenas or court orders for VoiceStream East and Central markets to: (973) 872-5729.

Fax all subpoenas or court orders for VoiceStream West markets to: (425) 378-6050

VS West markets are: Arizona, Colorado, District of Columbia, Hawaii, Idaho, Iowa, Kansas, Maryland, New Mexico, Oklahoma, Oregon, Texas, Utah, Virginia, Washington, and Wyoming.

VS East markets are: Connecticut, Delaware, Florida, Indiana, Massachusetts, Maryland, Maine, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island.

VS Central markets are: Florida, Kansas, Louisiana, Minnesota, Missouri, Ohio, Pennsylvania, Texas, Wisconsin, and West Virginia.

3.3 Procedure - Personal Service

Agencies within some jurisdictions employ the personal service of subpoenas and court orders upon a respondent. VoiceStream discourages this practice as it delays the response and unnecessarily discloses sensitive information to additional persons. However, to accommodate those instances in which personal service is required, VoiceStream has designated numerous “points of service” where subpoenas can be served. There is at least one point of service within each state in which VoiceStream wireless services are commercially available.

For the location of the nearest VoiceStream “point of service” call (973) 872-5711.



3.4 Procedure - Service via U.S. Mail or Express Delivery

Subpoenas and court orders may also be sent, via the United States Postal Service, commercial express delivery services, or couriers to:

VoiceStream Wireless Corp.
Attn: Law Enforcement Relations Group
360 Newark-Pompton Tpke
Wayne, NJ 07470

3.5 VoiceStream Responses

Most subscriber identifying information reports and call detail records are returned to the requesting authority via facsimile. In the event that the data is voluminous (e.g. in excess of thirty pages) the response will be sent by US mail or express delivery services as required.

3.6 Disclosure

Records documenting the receipt and response to subpoenas and court orders are maintained by the Law Enforcement Relations Group in a secure manner. VoiceStream does not enter inquiries and/or court order information into the VoiceStream subscriber database or billing system. *It is unnecessary to periodically request that VoiceStream maintain the confidentiality of subpoena requests .*

As a matter of general business practice, members of the VoiceStream Law Enforcement Relations Group will neither confirm nor deny the existence of subpoena history to an inquiring subscriber. Should VoiceStream be served with a civil subpoena for the disclosure of such information, VoiceStream will promptly contact the affected investigative agency. Efforts to quash the subpoena can be subsequently considered.

4.0 SUBSCRIBER INFORMATION

4.1 Available Subscriber Information

Federal law (18 U.S.C. §2703) specifies four categories of subscriber information that telecommunications carriers may disclose in response to subpoenas from the law enforcement community. In compliance with this mandate, VoiceStream will provide, upon receipt of a valid subpoena from an appropriate authority, the following general subscriber information:

- Mobile Telephone Number (MSISDN)
- Account Number
- Account Type
- Subscriber Account Name (or “Screen Name”)*
- Billing Address*
- Subscriber’s Social Security Number*
- Subscriber’s Date of Birth*
- “Can Be Reached” (CBR) Numbers*
 - Home telephone number
 - Work telephone number
- International Mobile Subscriber Identity (IMSI)
- Date Account Established

*as provided by the subscriber

4.2 Statutory Limitations

Statutes in some states are more restrictive and preclude the release of certain categories of information by subpoena. In some states (e.g. New Jersey) a Court Order is required to authorize the release of *any* subscriber information. VoiceStream’s response will always be governed by the prevailing federal or state statute.

4.3 Suggested Subpoena Composition

Ideally, a subpoena will (1) clearly provide the criteria upon which a search for subscriber information will be based, and (2) specify the identification being sought. Since terms used in different communications technologies are not interchangeable, the misapplication of terms within a subpoena may obscure the search criteria from a legal or practical standpoint. This could delay a response or result in the rejection of the subpoena as deficient. For example, the term “Mobile Identification Number” (or “MIN”) is not applicable in the GSM technology deployed by VoiceStream, so a subpoena using this term will be rejected.

Sample text on the following page will assist agencies in the proper composition of the most common types of subpoenas for subscriber identification information.

4.3.1 Inquiry Based on Mobile Number (MSISDN)

The most frequent request for subscriber identification is based upon a VoiceStream mobile telephone number, or "MSISDN." Sample:

"... provide subscriber identification information for the VoiceStream subscriber currently associated with the mobile telephone number (MSISDN) of *[insert area code and telephone number]*."

4.3.2 Inquiry Based on Subscriber Identity Module (SIM) Serial Number

A subscriber information inquiry may also be based upon the serial number imprinted on a Subscriber Information Module, or "SIM" card. The SIM serial number can be associated with an International Mobile Subscriber Identity number (IMSI) which is permanently linked to an individual subscriber. Sample:

"... provide subscriber identification information for the VoiceStream subscriber currently associated with the Subscriber Identity Module (SIM) card bearing serial number *[insert SIM card serial number]*."

4.3.3 Inquiry Based on International Mobile Subscriber Identity (IMSI)

A subscriber information inquiry may be based upon an International Mobile Subscriber Identity number (IMSI) which is permanently linked to an individual subscriber. This identifier does not appear on a user's handset or SIM card. As a result, it is unlikely that a law enforcement agent will encounter an IMSI during a routine investigation. Sample:

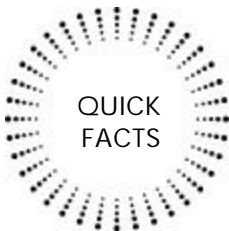
"... provide subscriber identification information for the VoiceStream subscriber currently associated with the International Subscriber Identity Number (IMSI) of *[insert IMSI number]*."

4.3.4 Inquiry Based on International Mobile Equipment Identifier (IMEI)

If a GSM handset was originally sold by VoiceStream or an authorized reseller it *may* be possible to associate an IMEI (or handset serial number) with the original subscriber. After the initial sale by VoiceStream, account information is subsequently maintained by a subscriber's account number, mobile telephone number (MSISDN) and International

Mobile Subscriber Identity (IMSI). The handset itself has no permanent association with an account. It may be interchangeably used by any number of VoiceStream subscribers or, in some cases, customers of other GSM carriers. As a result, this type of inquiry is not recommended. Sample:

“... provide subscriber identification information for the VoiceStream subscriber originally associated with an VoiceStream handset encoded with the International Mobile Equipment Identifier (IMEI) of [*insert IMEI*].”



Nokia 8290



Motorola Timeport

5.0 CALL DETAIL RECORDS

5.1 Available Call Detail Record Information

Itemized records document a subscriber's incoming and outgoing calls individually and, at a minimum, provide time, date and duration information. Collectively, these records are known as "Call Detail Records," or "CDRs."

5.2 Format of Call Detail Records

Call detail records are provided in a laser-printed bill image—a reproduction of the actual invoice received by a VoiceStream customer a few days following the end of the monthly billing period (Subscribers are assigned to a particular billing cycle depending upon the date and the market in which the account was established)—or in a laser-printed raw billing report generated by one of several systems used by LER group to access out-of-cycle call data. When CDR data is required for dates within a completed billing cycle, LER will forward a duplicate invoice or bill image to the investigative agency. When CDRs are requested for dates falling within multiple completed billing cycles, multiple bill images will be provided. Bill images may vary slightly, depending on the system used to process subscriber records in the various VoiceStream markets.

											Page 4
Invoice Date		Account Name			Account Number						
For Billing Inquiries											
Call 1-888-OMNI-611		RALPH R. JOHNSON			39485 -7			Mar			
06, 1999											
											Details of Usage Charges (201-757-0000)
①	→										
②	→	Line	Date	Time	Call From	Call To	No Called	Call Type	Rate Prd	Min	
		Charges									
		21	2-07	2:28P	METRO NY	FAIR LAWN NJ	201-475-0091		P	1	
③	→	22	2-07	3:12P	METRO NY	UNION CITY NJ	201-309-5934		P	3	
		.87									
④	→	23	2-07	3:22P			INCOMING		T	2	
		.58									
		24	2-07	8:39P	METRO NY	VOICE MAIL	*123		T	3	
		.87									
È		Mobile-originated (outgoing) call within the local calling area during peak calling period.									
È		Mobile call to the subscriber's voicemail mailbox (*123).									
Ì		Domestic long distance, mobile-originated calls.									
Í		Mobile-terminated (incoming) call.									

5.3 Suggested Subpoena Composition

A subpoena for call detail records should clearly identify (1) the subscriber account number and, (2) the time period, or “window,” in which call records are being sought. The subscriber account number is provided in every subscriber information response (see section 4.1). If you have not yet received the subscriber information and do not have the account number you may combine your request for the necessary data by specifying the MSISDN. See the sample in section 5.3.2.

As with subscriber identification requests, terms used by other wireless carriers and in other technologies are incompatible. For example, the phrase “LUDS, MUDS and Tolls” is not applicable in the VoiceStream environment and should be avoided. Collectively, we refer to the itemization of calling activities as “Call Detail Records” and strongly suggest that you utilize this term.

The samples which follow will assist agencies in the proper composition of the most common types of subpoenas for call detail records.

5.3.1 Most Recent Call Detail Records

The most common request focuses on the most recent calls. Such a request may be worded as follows:

“...provide all call detail records associated with [Acct #] for the period encompassing the last 60 days.”

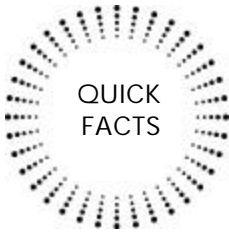
Assume that today is March 5, 1999, and that the customer’s billing cycle is 12 (covering the 12th of one month through the 11th of the following month). You will receive:

- A bill image for January 2001 (covering the period December 12, 2000 to January 11, 2001, with December 12 to January 4 edited out in order to conform to the relevant timeframe).
- A bill image for February 2001 (covering the period January 12, 2001 to February 11, 2001)
- An On-Line Call Detail Inquiry raw billing image covering the period February 12, 2001 to March 5, 2001.

5.3.2 Subscriber Information and Specific Call Detail Records

A request for subscriber information and call detail records may be combined into a single, properly constructed subpoena. Sample:

“... provide subscriber identification information for the VoiceStream subscriber currently associated with the mobile telephone number (MSISDN) of [*insert area code and telephone number*] and provide call detail records associated with such account for the billing period(s) encompassing [*date*] through [*date*].”



StarTac 7000



Nokia 9000i

6.0 PEN REGISTER OPERATIONS

6.1 General Capabilities

With proper authorization, VoiceStream can provide an agency with the call-related data of a specific subscriber. At a minimum, call-related data includes:

- Confirmation of target identity (IMSI or MSISDN)
- Date and time of each call or call attempt
- Digits dialed to complete the initial call (outgoing calls)

The scope of additional information depends on the type of vendor switching equipment that is used to process an individual call or call attempt.

6.2 Geographic Provisioning

In order to successfully provision for Pen Register and Intercept Operations, Law Enforcement must advise VoiceStream of the target's anticipated movement within and between VoiceStream market areas. This allows VoiceStream to provision the necessary switching facilities, ensuring seamless coverage should target roam outside his "home" area.

6.3 Delivery of Pen Register Information

As of early 2001, VoiceStream provides for the delivery of target-specific pen register data via two methods. For most agencies periodic reports are faxed to a specified law enforcement facility on a regular basis. Agencies engaged in high volume pen register and/or lawful intercept operations may wish to consider a "direct connect" option. The latter method requires an investment in equipment, software and a leased-line connection to a secure VoiceStream network access point. Further information on the direct connect option is made available to Technical Operations supervisors upon request.

VoiceStream is working toward full implementation of a CALEA-compliant method for delivering pen-register data to law enforcement. The final design and installation of this system should be complete by 2nd Quarter, 2001.

6.4 Sample Report

VoiceStream		LER Group - Call-Related Data Report					
Target IMSI: 310160123456789		Report Window: 04/21/99 8:00AM - 04/25/98 8:00AM					
Date	Start	End	Duration	CT	Dialed Digits/Calling Number	Switch ID	
04/21/99	12:13:24 PM	12:13:59 PM	00:00:35	I	2012572912	MSC-01N	
04/21/99	12:50:01 PM	12:51:01 PM	00:01:00	O	2012572992	MSC-01N	
04/22/99	1:08:00 PM	1:09:14 PM	00:01:14	I	2012572917	MSC-00N	
04/23/99	4:50:29 PM	4:50:30 PM	00:00:00	N	9172519999	MSC-02E	
04/24/99	11:12:13 PM	11:13:24 PM	00:01:11	O	123	MSC-02E	
04/24/99	11:50:33 PM	11:50:34 PM	00:00:00	U	19179179998	MSC-02E	
Call Type (CT) Codes: O=Outgoing I=Incoming U=Outgoing Unanswered N=Incoming Unanswered Monday, April 26, 1999 Page 1 2017572933							

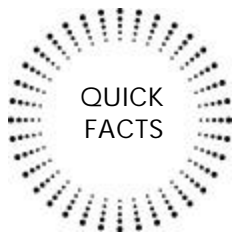
- ① Target's IMSI (International Mobile Subscriber Identity)
- ② Period of time covered by this report
- ③ Date, start time and end time of call or call attempt
- ④ Duration of activity
- ⑤ Type of call or call attempt (see key at bottom of page)
- ⑥ Digits dialed to complete initial call (outgoing call) or Calling party number, when provided to VoiceStream network (incoming calls)
- ⑦ VoiceStream switch identifier

6.5 Suggested Wording for Pen Register Order

A court order directing VoiceStream to provide Pen Register information must be constructed so as to uniquely identify the target. Keep in mind that, upon the request of a VoiceStream customer, the mobile telephone number (MSISDN) can easily be changed. Therefore, it is imperative to use the target's International Mobile Subscriber Identity number (IMSI), and the mobile telephone number, as unique target identifiers.

"...Ordered that for a period of [insert duration] days VoiceStream Wireless Corporation shall furnish all information, facilities and technical assistance necessary to accomplish the installation and use of a pen register device which shall; (1) register numbers dialed or pulsed in order to process outgoing (mobile originating) calls; (2) register source telephone numbers, as available, associated with incoming (mobile terminating) calls, and (3) register the date, time and duration of all call activities that are associated with the International Mobile Subscriber Identity (IMSI) of [insert IMSI]. This IMSI is currently associated with a mobile telephone number of [insert

MSISDN]; however, this Order shall also apply to any other mobile number(s) which may be associated with this IMSI. Such installation and use shall be conducted in a manner so as to minimize any interference with the services that are accorded the person(s) to whom the installation and use is to take place.”



Ericsson T28 World Phone (GSM 900/1900)



Nokia 8890 World Phone (GSM 900/1800/1900)

7.0 INTERCEPT OPERATIONS

7.1 General Capabilities

VoiceStream, through the Law Enforcement Relations Group, can provide “Title III” intercept services in response to an order issued by a court of competent jurisdiction. Essentially, this service supplements the capabilities of a Pen Register (as detailed in the previous section) with the delivery of the call content (i.e. conversation) to a designated monitoring facility.

7.2 Geographic Provisioning

In order to successfully provision for Pen Register and Intercept Operations, Law Enforcement must advise VoiceStream of the target's anticipated movement within and between VoiceStream market areas. This allows VoiceStream to provision the necessary switching facilities, ensuring seamless coverage should target roam outside his “home” area.

7.3 Delivery of Call Content

The “content” of an intercept includes audio (“speech”) generated by all participants in the call. Such conversations are passed, or “bridged,” to the monitoring facility of the law enforcement agency through the public switched telephone network (PSTN). Call content delivery is “one-way,” that is, audio that might be generated at the monitoring center cannot be transmitted into the ongoing conversation of the target.

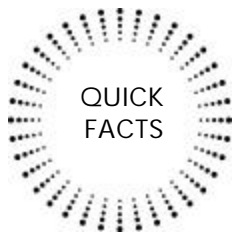
To support the receipt of the intercepted call content, VoiceStream must be advised of the assigned ten-digit telephone number, or “C number” at the monitoring facility. Once the affected switches have been provisioned, all subsequent calls will be bridged to the C number. From an operational perspective, this means that as a target's outgoing or incoming call is processed, the VoiceStream switching equipment instantly generates a simultaneous call to the monitoring center.

It is the responsibility of the monitoring authority to provide and maintain the PSTN circuit and any ancillary equipment (i.e. latching relay, recorder interface, recorder, etc.) that may be needed to support the intercept operation.

7.4 Suggested Wording for Intercept Order

Statutory provisions vary from state to state and often differ from the federal requirements under Title 18 of the United States Code. Therefore, this guide can only provide generic language which satisfies the *identification* elements of intercept orders. Remember that a pen register or intercept order must be constructed so as to uniquely identify the target. Since a target's mobile telephone number (MSISDN) can easily be changed *the order must reflect the target's International Mobile Subscriber Identity number (IMSI) and mobile telephone number*, as unique target identifiers.

“...Ordered that for a period of *[insert duration]* days VoiceStream Wireless Corporation shall furnish all information, facilities and technical assistance necessary to surreptitiously intercept all communication activities that are associated with the International Mobile Subscriber Identity (IMSI) of *[insert IMSI]*. This IMSI is currently associated with a mobile telephone number of *[insert MSISDN]*; however, this Order shall also apply to any other mobile number(s) which may be associated with this IMSI. Such installation and use shall be conducted in a manner so as to minimize any interference with the services that are accorded the person(s) to whom the installation and use is to take place.”



Ericsson 788



Ericsson R280

8.0 VOICEMAIL ORDERS

8.1 Voicemail Features

Voicemail is a feature enjoyed by all VoiceStream customers. The scope of voicemail capabilities varies according to the package to which the customer subscribes -- Basic, or Optional. However, even the Basic plan includes common "answering machine" capabilities. Similarly, all subscribers have control over which calls will be directed to their voicemail "mailbox." A user can specify:

- All incoming calls, or
- Calls received when the subscriber's handset is "busy," and/or
- Calls which are unanswered, and/or
- Calls received when the subscriber is "unreachable" (out of range or handset turned "off").

In addition, most handsets support the redirection of individual incoming calls to voicemail after the user views the "Caller ID" display. This provides an effective means of screening calls.

8.2 Cloning Capabilities - Voicemail Messages

The "cloning" of a subscriber's voicemail is an investigative tool that may be enabled pursuant to an appropriate authorization issued by a court of competent jurisdiction. This voicemail surveillance feature can be applied to any account, surreptitiously duplicating each incoming voice message left for the targeted subscriber. A twin message is simultaneously deposited in a special mailbox assigned to the designated investigating agency. Password-controlled access to the special mailbox supports message retrieval at any time. When used as directed, the targeted subscriber is given no indication that mailbox activities are being monitored.

8.3 Cloning Capabilities - Fax Messages

For a VoiceStream subscriber with the Optional Feature Package, the mailbox also serves as the repository for fax messages directed to him. Fax messages may be sent to a subscriber's mailbox from any conventional facsimile machine or fax-equipped personal computer. Faxes also may be forwarded from or to the mailbox of another VoiceStream customer who has the Advanced Feature Package.

There are three methods by which a fax message, deposited in the mailbox of a VoiceStream subscriber, may be subsequently retrieved and printed. Stored fax mail may be forwarded, on a fax-by-fax basis, to a conventional fax device. A subscriber may program a mailbox to automatically forward all fax messages to a primary or secondary 10-digit telephone number. Generally, these are numbers of other fax machines or VoiceStream subscribers. Finally, when a subscriber calls voicemail directly from a fax machine, the stored fax may be "delivered" to that very device.

When the mailbox of a targeted subscriber is "cloned," both voicemail messages and fax messages are duplicated in the mailbox assigned to the investigating agency. However,

redirecting the cloned fax messages to another fax machine (for printing) will not be enabled unless the order specifically authorizes the retrieval of fax messages sent to the targeted subscriber. If this directive is not specifically included, law enforcement agents will only be able to retrieve targeted voice messages.

8.4 Verbiage for Court Orders

The statutory requirement for intercepting and/or retrieving voicemail and fax messages varies from state to state. Under federal law (18 U.S.C. §2703), such stored communications may fall within the scope of “stored electronic communications” so a search warrant authorizing the repeated access to the stored messages may be required. Consult your legal experts for definitive advice.

Some fundamental elements should be included in the order regardless of jurisdiction. Here are some suggestions to consider:

- Include the International Mobile Subscriber Identity (IMSI) of the target. For carriers deploying the GSM technology the IMSI is the only truly unique and permanent identifier associated with a subscriber account.
- Indicate the mobile telephone number currently associated with the target along with “*any mobile telephone number and voicemail service which may, during the duration of this Order, be associated with the IMSI [insert IMSI]...*” This prevents the interruption of voicemail cloning should a subscriber request a change in their mobile telephone number.
- If the order is to encompass fax messages stored within the target’s voicemail mailbox, it must be specifically authorized. If desired, the order may designate the number of a fax machine to which the stored messages are to be sent.

8.5 Implementation

Upon service of an appropriate court order, VoiceStream will enable the voicemail surveillance feature for the specified target and assign a “clone” mailbox to the investigating agency. An authorized agent accesses the clone mailbox by calling a voicemail access number; the target’s area code and exchange followed by specified digits (i.e. 62-4-5 (M-A-I-L) in the VS East markets). When prompted, the agent enters a special mailbox ID and password to listen to stored voice messages (and access fax messages, if so authorized).

9. PREPAYS AND "HOTLINES"

9.1 Subscriber Accounts: The "Prepay" Class

The "Prepay" account class is often selected by people who have a limited credit history, do not want to overextend their present credit indebtedness, or simply wish to keep better control of their communications expenses. This type of subscriber account may be established with an initial payment of \$50.00 and maintained with subsequent payments of \$10.00 or more. Charges for the selected monthly feature package, as well as the cost of calls and supplemental services, are applied against the subscriber's running credit balance.

When the credit balance of a prepay subscriber's account drops to a specified level, a short text message is sent to the handset. Payments can easily be made in various forms; credit card, cash, check, money order or Prepay Coupons available through VoiceStream retailers.

Due to the "cash-up-front" nature of Prepay accounts, subscriber identifying data is not as detailed as on post-pay accounts. In many cases, while subscribers are urged to provide name and contact numbers, many choose to provide only the minimum requirement, a date of birth. At a minimum, our response to subpoenas requesting information on a Prepay account will include MSISDN, IMSI, date of activation, and—if applicable—date of termination. Call detail records are available from Prepay accounts.

9.2 Suspension of Prepay Accounts

Should the balance of a prepay subscriber be exhausted, service is temporarily suspended. This suspension can occur even during an active call. All subsequent outgoing call attempts are routed to the VoiceStream Customer Care Center and incoming calls are met with a recorded announcement. Suspension is an automated function which cannot be disabled on an individual subscriber basis. Within minutes from the time that an adequate payment is made, restrictions will be removed and normal incoming and outgoing services will be restored.

9.3 Court Orders and Prepay Suspension

While court-ordered "pen register" or intercept activities are underway, it may be desirable to ensure that the wireless services of the target are not interrupted. From an investigative perspective it's important to understand how the automatic suspension procedure can be avoided (or removed) by applying a coupon payment to the account of the targeted subscriber. The case officer or agent must carefully consider how this action might jeopardize an ongoing investigation. *The decision as to whether or not to apply an anonymous coupon payment, as well as the actual coupon payment process itself, rests solely with the law enforcement agency.*

9.4 Payment Methods and Prepay Coupons

A subscriber may make a deposit to his account in a variety of ways: he can visit a VoiceStream store and make a payment by credit card, cash or check, or he can call the VoiceStream Customer Care Center and make a credit card payment , *but only if the name on the credit card matches the name on the subscriber's account.* Cash payments may also be made via Western Union. Another flexible option, especially well-suited for an anonymous credit, is the prepay coupon.

Prepay coupons may be purchased at VoiceStream retail stores and at many authorized retailers by credit card, cash or check. They are available in denominations of \$10.00, \$25.00, \$50.00, \$100.00, and \$200.00. An agency may wish to keep a number of non-expiring coupons on hand so that they can be applied to an account expeditiously.

A prepay coupon may be applied, in an anonymous fashion, to the account of any VoiceStream subscriber. The following procedure will result in the application of a credit, in the face amount of the coupon, within approximately three hours:

- Call the VoiceStream Customer Care Center at (888) OMNI-611. Ignore the menu system; you will be connected to a Customer Care Representative.
- Provide the following information: (1) the subscriber's name and handset phone number, (2) the "Coupon Number" printed on the face of the coupon, and (3) the "Serial Number" printed on the back of the coupon. Suggestion: Indicate that you are "giving a gift to a friend."

9.5 Refund Policy

All payments, including prepay coupons that may be utilized by a law enforcement agency, become an "asset" of the subscriber's account. As such, subsequent refunds cannot be made to a third party. If an account has a credit balance when it is permanently closed only the subscriber of record may apply for a refund for the remaining balance.

9.6 Caution is Urged

It is important to note that account adjustments, including coupon payments, are reflected in the subscriber's account record. It is not possible to suppress the inclusion of this information in the account record or on the monthly statement, so if a subscriber calls our Customer Care Center and inquires about his account, the Prepay Coupon credit may be disclosed. However, the subscriber record does not identify the purchaser of the prepay coupon.

Please consider these facts and the potential impact that the disclosure of unexpected coupon payments may have on the investigation. In some cases, it may be preferable to avoid any manipulation of the target's account.

10. CALLS TO DESTINATION

10.1 Introduction

VoiceStream Wireless Corporation makes available a “Calls to Destination” search capability as an investigative tool for the law enforcement community. This function itemizes calls processed by the VoiceStream network made to a telephone number provided by the investigating agency. A request for this service, for which a fee is charged, must be supported by an appropriate judicial authorization (subpoena or court order).

10.2 Search Criteria

The “Calls to Destination” search request may be focused on *any* domestic or international telephone number. This “destination number” need not be associated with a VoiceStream subscriber. However, the number provided by the investigating agency must be complete. Domestic numbers, conforming to the North American Numbering Plan, must include the full ten digits. Searches based on an international number require the complete country and city codes. Variations of a “destination number,” if needed, must be specified within the judicial authorization and will be searched individually.

Examples: Domestic destination number: (212) 555-3923
 International destination number: 011-49-30-872324
 Variation of domestic number: (212) 555-3291, 3292 or 3293 (3 searches)

10.3 Search Results

The destination number is searched against all the individual call records processed within the VoiceStream network during the previous thirty (30) days. The thirty-day parameter is a fixed value that cannot be modified. Only outbound calls are included in the report. For each “hit,” the following information will be provided:

- Calling Party’s MSISDN (telephone number)
- Calling Party’s IMSI (International Mobile Subscriber Identity number)
- Date and time that call started
- Call Duration (in seconds)
- Number called (the “destination” number)

If the MSISDN/IMSI is that of a VoiceStream account, and if authorized by the subpoena or court order, the pertinent subscriber identification information will also be provided.

10.4 Suggested Verbiage for Subpoena or Court Order

It is critical that the applicable subpoena or judicial writ contain language that clearly identifies the information being sought. The document must specify the destination number and, if needed, specify that subscriber information be provided for each VoiceStream subscriber disclosed by the search.

Examples:

“...perform a “Calls to Destination” search, identifying any and all outbound/originating calls made to *[insert destination number]* which were processed by the VoiceStream network during the thirty (30) days preceding such search. “

“...(1) Perform a “Calls to Destination” search, identifying any and all outbound/originating calls made to *[insert destination number]* which were processed by the VoiceStream network during the thirty (30) days preceding such search. (2) For each VoiceStream MSISDN/IMSI identified as the originator of such a call, supply subscriber identification information applicable at the time the outbound/originating call was placed.”

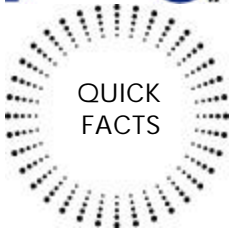
10.5 Fee Schedule

The fee for each number searched is \$100.00, irrespective of the results of the search. This amount minimally reflects the cost of the application software, infrastructure, personnel and other expenses associated with this feature. The requesting agency is expected to provide necessary billing and “accounts payable” contact information before the search is conducted. Invoices are generated shortly after the results are provided and are payable at net, 30 days from the date of the invoice. The availability of subpoena-based “Calls to Destination” searches may be denied to an agency which is delinquent in their payment(s) for law enforcement support services. Please note the sample “Billing Information Form” on the following page.

10.6 Limitations

Individual call detail records, on which a “Calls to Destination” search is based, are generated by the hundreds of thousands. Because they are so voluminous this type of search is extremely resource intensive and must be conducted during off-peak service periods. Raw data files which have aged more than thirty (30) days are unavailable for searching.

VoiceStream reserves the right to reject any “Calls to Destination” search that, by it’s nature or scope, would place an unreasonable demand on our processing systems or in anyway jeopardize the efficiency of our telecommunications network.



Nokia 5190



Nokia 6190



10.7 Sample Billing Information Form

BILLING INFORMATION "CALLS TO DESTINATION" SEARCH SERVICES	
VS LER File No. 2001-	Agency Reference No.
Agency Name: _____	
Unit/Section: _____	
Billing Address: _____ _____	
City/State/Zip: _____	
Billing Contact Person: _____	
Telephone: _____	Fax: _____
I have received a copy of the VoiceStream Fee Schedule for "Calls to Destination Searches" and acknowledge the charge(s) of \$100.00 per target number searched.	
Signature: _____	
Printed Name: _____	Title: _____
Date: _____	
This completed form, along with any tax exempt certificate, agency voucher, claim and/or other required billing material should be promptly returned to the Law Enforcement Relations Group.	
Note: Calls to Destination Searches will not be conducted until this completed form has been returned. Forms may be transmitted via fax: (973) 872-5729.	

11.0 FREQUENTLY ASKED QUESTIONS

11.1 Subscriber Records

What subscriber search capabilities does VoiceStream have?

The most common search is based on a VoiceStream mobile telephone number. We can also search by subscriber or company name, account number, SIM serial number, or IMSI.

Can you search by the general or specific address of a subscriber?

No; address searching is not available at the present time.

11.2 Call Detail Records

Do VoiceStream call detail records identify the location of the handset when a wireless call was made or received?

No. Call detail records reflect date, time and duration information and, for outgoing calls, the called number. Information identifying the location of the handset or the base station is not a factor in the computation of charges and is not included in bill images or on-line call detail reports.

Will call detail records include the number of the person calling a VoiceStream subscriber?

Not always. Out of cycle call detail records obtained through the FraudBuster system show incoming caller ID. These records are limited to thirty (30) days prior to the date of search. Normal call detail, or bill images, do not show incoming caller ID. Calling party identification is included, whenever available, on pen register reports.

On a VoiceStream “On-Line Call Detail Inquiry” report there’s an “ORIG” column. Is this a cell site or sector identifier?

Neither. This generic report format is the product of our billing contractor. The “ORIG” has no significance.

For how long a period does VoiceStream retain call detail records?

On-line access to call detail records is limited to the last six (3) completed billing cycles - three months. Retrieval of older records is still possible but a significantly longer processing time is required. VoiceStream has agreed to retain subscriber and call detail records for a period of two (2) years past date of activity.

11.3 Handsets

We recovered a VoiceStream handset. Can we determine the phone number?

If the handset is fully operational we suggest you call another phone equipped with “Caller ID” services (i.e. another VoiceStream handset). The mobile number will be displayed on the “CallerID” screen, unless the “Block All Caller ID” feature has been enabled.

We recovered a handset equipped with a VoiceStream SIM card, but the phone doesn't work. How can we get more information?

VoiceStream can perform a subscriber record search based on the serial number printed on the SIM card. If no authorization is available we will, on request, attempt to contact the subscriber most recently associated with the SIM card and ask them to contact you. A subpoena or court order may be required.

We recovered a VoiceStream handset that has no SIM card. How can we get more information?

Every GSM handset has a unique serial number, known as an International Mobile Equipment Identity (IMEI) number. VoiceStream can perform a search based on the IMEI to determine the IMSI that was originally installed in the handset. If this search is successful, the original VoiceStream subscriber may be identifiable. A subpoena or court order may be required.

We recovered a SIM-less handset that bears the logo of another carrier. We have the IMEI. Can you help?

No. Our database includes records of IMEIs associated with VoiceStream subscribers only.

We recovered a handset with the SIM card intact. What information might we be able to retrieve?

Depending upon the make and model, it is likely that you may be able to identify the source telephone of recently "missed" or unanswered calls, short text messages that have not been deleted, and the "speed dial" numbers that have been user-programmed and stored in memory on the SIM card.

11.4 Prepay Subscribers

What are the roaming limitations on prepay subscribers?

Currently, prepay subscribers are not permitted to roam outside of the VoiceStream network.

How can a prepay subscriber make a payment to his account?

Prepay Coupons may be redeemed and credited to a subscriber account at any time of the day or night. Payments are also accepted at VoiceStream Centers and at Western Union facilities. A credit card payment may also be made by calling the VoiceStream Customer Care Center but the credit card account must match the VoiceStream subscriber account.

11.5 "Hotlines"

Can VoiceStream flag an account to prevent it from being hotlined?

No. Hotlines are automatically applied by the system, most often when prepay funds have been depleted. The only way to prevent this action is to ensure that funds are not exhausted. Prepay coupons may be used for this purpose.



Can VoiceStream flag a hotlined account and alert an agency when the account is returned to service?

No. Services are automatically restored (within two to three hours) when funds are “deposited” into the account of a hotlined prepay customer. There is no “alerting” feature available.

11.6 Voicemail

Our agency recovered a VoiceStream handset. There is an indication that there are voicemail messages waiting to be retrieved. How can we recover those messages?

Voicemail falls under the category of “stored electronic communications.” Access to such information requires the presentation of an appropriate court order.

Can there be more than one phone number associated with a single IMSI?

VoiceStream does not offer this option at the present time. However, some GSM networks are deploying multi-line features.

11.7 Roaming

If we are conducting a court-authorized pen register or intercept operation on a VoiceStream subscriber, what will happen if the target “roams” into another portion of the VoiceStream network?

Pen register and intercept operations require special programming on a switch-by-switch basis. These switches serve defined geographical areas. Therefore, if the subscriber is in an area served by a VoiceStream switch that has not been programmed, no data or content will be available.

If we are conducting a court-authorized pen register or intercept operation on a VoiceStream subscriber, what will happen if the target “roams” into the network of another GSM carrier?

VoiceStream has no access to the content or data associated with a VoiceStream subscriber who is operating on another GSM network. However, it may be possible to identify another GSM network in which the targeted subscriber is currently “registered.”

If a federal order names a “home” carrier and “...any other telecommunications service provider who may support technically compatible services through a roaming agreement,” it may be possible to initiate the court-ordered activity with the other GSM carrier quite rapidly.

11.8 Security

Can GSM phones be cloned?

No. Some researchers claim the ability to copy information from a Subscriber Identity Module (SIM) card, but duplicating a SIM card is not cloning. A GSM network can preclude the simultaneous use of multiple SIM cards.

Does this mean that a SIM card can be duplicated “over the air?”

No. To duplicate a SIM card requires physical possession of the card.

Do conversations remain secure?

Absolutely. The tactics used by these researchers do not affect the sophisticated encryption scheme that protects conversations from eavesdropping.

11.9 Miscellaneous

Does VoiceStream support the “SMART System” used by some wireless carriers?

No.

Can a subscriber block “Caller ID” like wireline service providers?

Yes. A subscriber may block calling party identification on all outgoing calls by making a request to the Customer Care Center. Blocking of individual calls can be implemented through a handset function. Note that blocking of “Caller ID” will not affect pen register operations.

We’re preparing a pen register (or lawful intercept) order for the approval of the court. How can VoiceStream help?

VoiceStream can assist by reviewing a draft of your efforts in advance, ensuring that the critical identifying terms are valid and properly applied. For security reasons, specific target information may be omitted from the draft document.

12.0 FEES FOR SERVICES

12.1 Authorization

Telecommunications carriers are entitled, under federal and state statutes, to be compensated for reasonable expenses incurred in providing the “information, facilities and technical assistance” necessary for pen register or lawful intercept activities. VoiceStream’s fee schedule reflects the cost of switch application software, infrastructure, personnel and other costs incurred in providing such services pursuant to court order.

12.2 Pen Register and Pen Register/Intercept Orders

- A flat fee of \$250.00 *per switch* applies to each International Mobile Subscriber Identity (IMSI) number targeted by a Pen Register or Pen Register/Intercept Order. This fee covers the first thirty (30) day period specified in the original court order.
- Should the Pen Register or Pen Register/Intercept activity continue beyond thirty (30) days (under the terms of the original order or any extension thereof), a fee of \$50.00 *per switch* will apply to each subsequent *and continuous* period of thirty (30) days or part thereof.
- Costs associated with any temporary or permanent leased circuits (i.e. ISDN, T1, etc.), ancillary equipment (i.e. routers) and/or software application(s) are the sole responsibility of the law enforcement agency administering the court-authorized activity.

12.3 Pen Register/Intercept Orders - Additional Charges

- Intercept Orders are subject to an additional flat fee of \$100.00 per 30 day period, or part thereof. This charge offsets the cost of call bridging services and delivery of the voice content, via the public switched telephone network, to an agency’s *local* monitoring facility.

12.4 Cloning of a Subscriber’s Voicemail

- A flat fee of \$150.00 per voice mailbox applies to the “cloning” of a subscriber’s voicemail services. The flat fee applies to each period of ninety (90) days or part thereof.

12.5 Calls to Destination

- A flat fee of \$100.00 per destination phone number searched.

12.6 Emergency Responses

- Initiating pen register, lawful intercept, or voicemail cloning activities is usually conducted during VoiceStream's normal business hours (Monday through Friday, 8:30 a.m. to 5:30 p.m., holidays excluded). A 100% surcharge will be applied to any activities which, at the request of the law enforcement agency, are initiated outside of normal business hours.

Fee Schedule Subject to Change Without Notice

12.7 Billing Practices

The Law Enforcement Relations Group is most cognizant of the sensitive nature of all court-ordered pen register and intercept activities. At the commencement of a court-sanctioned operation, the law enforcement agency will be asked to provide billing account and contact information for later use.

In order to minimize knowledge of such carrier-supported operations, billing activities are generated until the pen register or intercept activities have been included. This includes any court-authorized renewal periods. Further, no target-identifying information, other than an agency assigned tracking or case number, will appear on the actual invoice.



13.0 SUPPLEMENTAL REFERENCES

13.1 Publications



An outstanding introductory reference to the Global System for Mobile communications is “*GSM Made Simple*,” written by George Lamb and published by Cordero Consulting, Inc. Specifically designed for the non-engineer, this text includes chapters on the Building Blocks of GSM, GSM Subsystems, Customer Setup and Provisioning, Basic Call Processing, Services and Features, Billing and Future Enhancements. Law enforcement agents will find a helpful GSM glossary, an international listing of GSM operators, FCC license block information, frequency listings and other informative reference lists.

Order “*GSM Made Simple*” through Tessco (800) 472-7373 - Item #63139, or directly from the publisher, Cordero Consulting, Inc., at (770) 414-8311

13.2 Internet Websites

There are a number of informative resources available on the Internet. In addition to those listed below, many GSM carriers, both domestic and international, maintain web pages which identify their service areas, roaming partners, tariffs and IMSI network codes (MNCs).

www.VoiceStream.com
VoiceStream’s own - come visit!

www.pcia.com
Personal Communications Industry Association

www.gsmworld.com
Information on GSM carriers throughout the world

www.phones.se/systems/gsm/usamap.html
Ericsson - one of VoiceStream’s major equipment vendors

www.nortel.ca/home/home.html
Nortel (Northern Telecom) - one of VoiceStream’s major equipment vendors

www.siemens.com
Siemens - VoiceStream’s newest switch vendor