Calling Directory Number Delivery - via ICLID (1064)

Calling Directory Number Delivery via Calling Number Delivery (CND) (CLASS[SM]) allows the subscriber to receive the telephone number of the caller prior to answering the call.

When Calling Number Delivery (CND) is assigned to the subscriber's line, the directory number of the calling party, the time of the call and the date are sent to, and displayed on, the called party's Customer Premises Equipment (CPE) during the first long silent interval of the ringing cycle (between the first and second rings). If the calling party is outside the area in which the service works, the called party's CPE will receive an "O" which in most cases is displayed as "Out of Area" (actual display is the function of the CPE used).

Generic Name of ONA Service	Product Name	BSE or CNS
Calling Directory Number Delivery- via ICLID	AM - Caller ID	CNS
	AM - Caller ID With Call Waiting	CNS
	BA - Caller ID	BSE
	BS - Caller ID	CNS
	NX - Caller ID	CNS
	PB - Caller ID	BSE
	SWB - Caller ID	CNS
	USW - Caller Identification - Number	BSE

FEATURE OPERATION:

The customer must contact the telephone company to have the Calling Directory Number Delivery service activated. Once the translation changes have been made to the customer's line and the customer has installed the appropriate CPE, the calling number, date and time of the call is automatically transmitted to the customer's CPE. If the service is offered on a usage-sensitive basis, the customer has the option of turning the display device on and off by using the service access codes *65 or 1165 for activation and *85 or 1185 for deactivation. If the service is offered on a flat-rate basis, the display device cannot be turned on and off using the access codes.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE10*	5E5	BCS28

NOTE: * Available on intraoffice basis with generic 1AE9.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

2. The serving central office switch must be equipped with the appropriate CLASS[SM] Calling Number Delivery software and hardware. In order for this service to work on an interoffice basis, both the originating and terminating switches must be equipped with the CLASS[SM] and the Common Channel Signaling (CCS) SS7 software and hardware and the interoffice trunks must be converted to SS7.

3. This service is a "line" service and therefore cannot be assigned to subscribers with trunk terminations (i.e., PBX with DID). This service is also unavailable to multiparty lines, coin terminating and 1A ESS remote switching system (RSS) lines. This service requires on-hook transmission, therefore there may be instances (MFT, Channel Banks) where this service may not work. An exception is Ameritech's offering of "Caller ID With Call Waiting."

4. The subscriber must have a station set or a display device adjunct to the station set capable of receiving and displaying the calling directory number. The subscriber is responsible for the purchase and installation of this display device.

5. If the subscriber answers the telephone during the first ringing interval, the calling directory number will not be displayed at the CPE.

6. References:

   - TR-NWT-000031, CLASS[SM] Feature: Calling Number Delivery, FSD 01-02-1051 (A Module of LSSGR, FR-64), Issue 4, December 1992.

   - GR-30 LSSGR Voiceband Data Transmission Interface Section 6.6 (A Module of LSSGR, FR-64), Issue 2, December 1998 (replaces TR-NWT-000030, Issue 2).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

Carrier Selection On Reverse Charge (1065)

800 Service is a telecommunications service in which any charges for the call are paid by the called party rather than the calling party. Dial access for the service is in the form of 1-800-NXX-XXXX. [Note: 888, 877, 866 and 855 are now equivalent to 800.]

The 800 Service subscriber purchases service from particular areas and incurs all the costs associated with processing calls for the calling parties. The unique reverse billing feature provides the calling party with "free" calls, while allowing the 800 Service customer, the called party, to encourage calls from parties of choice.

Generic Name of ONA Service	Product Name	BSE or CNS
Carrier Selection On Reverse Charge	AM - 800 Dialing Alternative	BSA *
	BA - 800 Access Service	BSE
	BS - 800 Service	BSA
	NX - 800	BSE
	PB - 800 Access Service	BSA **
	USW - 800 Service	BSA *

FEATURE OPERATION:

BOC 800 Service provides for the assignment of a single ten digit 800 Number (i.e., 800+XXX+XXXX) to the customer which can be used on a statewide basis for intraLATA calling. The service can be selected for an area consisting of less than an entire state by specifying a desired area of service.

The basic BOC 800 Service to an individual customer consists of the following capabilities:

1. The assignment of a single 800 number, which allows but does not require the subscriber to use one 800 number nationwide.

2. A termination that connects a location specified by the customer to the BOC's switched facilities.

3. Access to a single exchange or interexchange carrier for intraLATA transport.

4. Carrier selection.

5. Customer defined area of service.

6. The offering of national directory assistance listings to be passed to the national directory assistance provider.

* For Ameritech and U S WEST, this is a Circuit Switched Trunk Type BSA alternative.
** For Pacific Bell, this is a Circuit Switched Line Type BSA alternative.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. References:

   - SR-2275 Bellcore Notes on the Networks, Issue 3, December 1997 (replaces SR-TSV-002275, Issue 2)
   - GR-508 LSSGR: Automatic Message Accounting (AMA) Section 8, (A module of LSSGR FR-64) Issue 2, December 1997, Revision 1 – December 1998 (replaces TR-TSY-000508, Issue 3).
   - TR-NWT-000533 Database Services - Service Switching Points, FSD 31-01-0000 (A Module of LSSGR, FR-64), Issue 3, January 1994.
   - U S WEST document 77318 Compatibility Information for 800 Service Switched Access, May 1986.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Coin Phone With Post Dialing Tone Capability (1062)

This capability provides for the coin phone key pad to remain enabled throughout a call. An ESP's client can then transmit information to the ESP utilizing DTMF signaling. Some non-LEC coin stations are not connected to Central Office lines with a coin class of service and so are not treated as "coin" telephones from a network standpoint.

Generic Name of ONA Service	Product Name	BSE or CNS
Coin Phone With Post Dialing Tone Capability	BA - Public Telephone Service	CNS *
	BS - Post Dial DTMF Signaling From Coin Phone	BSA *
	NX - Post Dialing DTMF Signaling From Pay Station	CNS *
	SWB - Post Dialing Capability (Public Telephone)	CNS
	USW - Semipublic and Shared Coin Lines	BSA *

* This network capability is an inherent function of LEC coin telephone service.

FEATURE OPERATION:

(This discussion applies to Dial Tone First Coin Stations.)

1. A coin station user goes off-hook and dials a local 7 digit number. At some time prior to the dialing of the last digit, the user deposits enough coins to cover the Initial Period charge. At this time, the coin phone key pad is powered by the loop current flow.

2. After receipt of the last digit, (assuming the call is not "911", "0", 1+, etc.), the loop current flow is interrupted so that the Central Office can test for the Initial Period deposit. The key pad is disabled at this time.

3. After it is determined that the initial deposit is present, and after the call is set up, loop current is reapplied to the circuit, enabling the keypad again. The keypad remains enabled throughout the remainder of the call.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2	BCS19

2. References:

   - TR-TSY-000181 Dual-Tone Multifrequency Receiver Generic Requirements for End-To-End Signaling Over Tandem-Switched Voice Links, Issue 1, March 1987.

   - TR-TSY-000450 Generic Requirements for Public Telephone Dual Tone Multifrequency Dial (DTMF), Issue 1, June 1989.

   - GR-528 Public Telecommunications Service FSD 10-01-0000, Issue 1, December 1994 (replaces TR-TSY-000528, Issue 2).

Customer Originated Trace (1066)

Customer Originated Trace (CLASS[SM]) capability allows a customer to have the last incoming number automatically traced. The results of the trace are not provided directly to the customer; they are output to an authorized agency. This capability requires that both the originating and terminating central offices be equipped with Common Channel Signaling (CCS) SS7 and be interconnected by SS7.

Generic Name of ONA Service	Product Name	BSE or CNS
Customer Originated Trace	AM - Call Trace	CNS
	BA - Call Trace	CNS
	BS - Call Tracing	CNS
	NX - Call Trace	CNS
	PB - Call Trace	CNS
	SWB - Call Trace[SM]	CNS
	USW - Call Trace	CNS

FEATURE OPERATION:

Depending on the Local Exchange Company's implementation of this service, the customer either contacts the telephone company to request the service, which requires a service order, or the service is automatically available on an office basis to everyone. In either scenario, once the appropriate translations are done to the line(s), the customer can initiate a trace of the last incoming call (after hanging up) by going off-hook and dialing *57 (1157 for rotary dial). The customer then receives one of the following type announcements depending on how the service is implemented:

- One-Level Announcement

  If the calling number is valid, an announcement is given informing the customer that the trace was successful and instructs the customer what to do next. If the calling number is invalid, an announcement is given indicating why the trace cannot be done and dial tone is returned to the customer.

- Two-Level Announcements

  The customer receives an announcement explaining that they have accessed the Customer Originated Trace service. Then, if the calling number is valid, the customer is instructed to dial "1" if they wish to activate the service and trace the call or to hang up to abort. If the customer dials "1", an announcement is given informing the customer that the trace was successful and instructs the customer what to do next. If the calling number is invalid, an announcement is given indicating why the trace cannot be performed and dial tone is returned to the customer.

The results of the trace are not given to the customer. They are automatically transmitted to an agency (determined by the telephone company), where the information is stored and available for further action.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

[SM] Call Trace is a service mark of Southwestern Bell Telephone Company.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**1A ESS**	**5ESS**	**DMS-100**
Earliest Generic Release	1AE10*	5E5	BCS28

Note: * Available on an intraoffice basis with 1AE9.

2. The serving central office switch must be equipped with the appropriate CLASS[SM] Customer Originated Trace software and hardware. In order for this service to work on an interoffice basis, both the originating and terminating switches must be equipped with the CLASS[SM] and the Common Channel Signaling (CCS) SS7 software and hardware and the interoffice trunks must be converted to SS7. This service is only offered on an intraLATA basis at this time.

3. This is a "line" service and therefore cannot be assigned to subscribers with trunk terminations (i.e., PBX with DID). This service is also unavailable to multiparty lines and 1A ESS remote switching system (RSS) lines. In addition, this service is unavailable to customers that have denied originating and denied terminating treatment.

4. The information delivered to the authorized agency includes: the called telephone number, the calling telephone number, the date, and the time of the call.

5. If the customer has Call Waiting and if the Call Waiting is activated during a call, the call waited number is the number that will be traced if Customer Originated Trace is activated.

6. References:

   - TR-TSY-000216 CLASS[SM] Feature: Customer Originated Trace, FSD 01-02-1052 (A Module of LSSGR, FR-64), Issue 2, May 1988, Revision 01 - May 1992, Bulletin 1 - February 1994.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

Cut Off On Disconnect (1095)

This capability provides a disconnect signal to the terminating party on a call, to indicate when the originating party has hung up. The benefit of this feature is that CPE equipment, such as answering machines, can detect the disconnect, and will not record messages consisting of "Dial Tone."

Generic Name of ONA Service	Product Name	BSE or CNS
Cut Off On Disconnect	BA - Business Individual Line	BSA *
	BS - Voice Grade Line - Circuit Switched	BSA *
	NX - Circuit Switched Line	BSA *

FEATURE OPERATION:

1. A call is placed to a line that has the "Cutoff On Disconnect" feature. After a predetermined number of rings, during which the called party does not answer, the called party's answering machine is connected to the call to record a message.

2. The calling party, wishing to speak with a person, decides not to leave a message, and hangs up. The terminating office sees an off-hook condition generated by the answering machine, and begins calling party disconnect timing.

3. After expiration of the timing interval, if the called party (answering machine) is still off-hook, and the line **does not** have the "Cutoff On Disconnect" feature, Dial Tone is applied to the line, which the answering machine records until the Central Office times out and begins Permanent Signal Treatment. However, if the line **is** equipped with the "Cutoff On Disconnect" feature, the Central Office supplies a 500 ms open to the line before applying Dial Tone. The answering machine can then recognize that the calling party has disconnected, and can drop the call before it starts to record Dial Tone.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	DMS-100
Earliest Generic Release	BCS25

2. The DMS-100 requires NTX901AA, F2653 - COD Option On An Office Basis and BCS25. The feature is assignable on both a line option and an office-wide basis.

References: not available.

* This service is inherent in the Circuit Switched Line basic serving arrangement in certain Central Offices.

DID Trunk Queuing (1067)

DID Trunk Queuing will permit calls directed to an ESP's All Trunks Busy DID Trunk Group to be held for delivery when a DID trunk becomes idle. This would allow the ESP to answer calls from clients that would otherwise have received a busy signal.

Generic Name of ONA Service	Product Name	BSE or CNS
DID Trunk Queuing	BA - DID Trunk Queuing	BSE
	PB - DID Trunk Queuing	BSE
	USW - DID Trunk Queuing and Basic Announcement	BSE

FEATURE OPERATION:

DID Trunk Queuing allows ESPs to receive and hold calls directed to their busy DID trunk group. This service will place these calls in a queue, to be held until a trunk between the central office and the ESP is available. When a trunk becomes available, a call will be released from the queue and connected to the idle trunk. Calls held in the queue will hear ringing unless the ESP has ordered that a delay announcement be played to the caller.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS
Earliest Generic Release	1AE8A

2. Calls placed in the queue are delivered on a "first in-first out" basis.

3. The number of calls to be held in queue at any one time is established by the ESP at the time the service is ordered.

4. A maximum of four delay announcements is possible.

5. Each delay announcement may vary in length from three to 24 seconds.

6. References:

   - TR-TSY-000569 Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, May 1990.

This service, if offered as a BSE, may be associated with the Circuit Switched Line or Trunk basic serving arrangement, as stated in the individual ONA plans.

Distinctive Ringing (1068)

Distinctive Ringing (CLASS[SM]) alerts a customer via a special ringing pattern when receiving a call from a pre-specified list of directory numbers. If the customer is also a subscriber to Call Waiting service, and is off-hook on a call, a special Call Waiting tone will be sent to the customer if the calling party's number is on the pre-specified list.

Generic Name of ONA Service	Product Name	BSE or CNS
Distinctive Ringing	BA - Priority Call	CNS
	BS - Call Selector	CNS
	PB - Priority Ringing	CNS
	SWB - Priority Call[SM]	CNS
	USW - Priority Call	CNS

FEATURE OPERATION:

The customer must contact the telephone company to initiate Distinctive Ringing service. A service order is required. The customer initiates control of the Distinctive Ringing screening list contents as well as activation and deactivation of the service by dialing access codes as described below. Once the appropriate translations have been made to the customer's line the customer may activate, deactivate and/or use the service as follows:

1. 1A ESS: To activate the Distinctive Ringing service, the customer must go off-hook and dial *61 (1161 for rotary dial). The customer will then receive an announcement providing the following information:

— The name of the service.

— The service is now active.

— The number of entries on the list.

— The instructions for creating/adding numbers to the list; removing subscriber's entries from the list; reviewing the list.

To deactivate the service, the customer must go off-hook and dial *81 (1181 for rotary dial). The customer will then receive an announcement providing the following information:

— The name of the service.

— The service is now off.

— The number of entries on the list.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

[SM] Priority Call is a service mark of Southwestern Bell Telephone Company.

— The instructions for removing any subscriber list entry; removing all subscriber entered numbers.

2. 5ESS and DMS-100: To activate or deactivate the Distinctive Ringing service, the customer must go off-hook and dial either *61 or *81 (1161 or 1181 for rotary dial). Once either access code has been successfully entered, the customer should receive an announcement providing the following information:

   — The name of the service.

   — The status of the service (active or inactive).

   — The number of entries on the list.

   — The instructions for creating/adding, removing, reviewing the list, changing of service status (active to inactive, inactive to active).

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**1A ESS**	**5ESS**	**DMS-100**
Earliest Generic Release	1AE10*	5E6	BCS31**

NOTE: * Available on an intraoffice basis with 1AE9.

** References to switching system generics that have not yet been released by the vendors are based on our current information about which features are planned for inclusion in those generic releases. If the vendors change the availability of any features for future generic releases that are referenced in this document, the availability of some services may be affected.

2. The maximum directory number list size is pre-determined by the telephone company on a company basis and can range from 2 to 31.

3. The serving central office switch must be equipped with the appropriate CLASS[SM] Distinctive Ringing/Call Waiting software and hardware. In order for this service to work on an interoffice basis, both the originating and terminating switches must be equipped with the CLASS and Common Channel Signaling (CCS) SS7 software and hardware and the interoffice trunks must be converted to SS7.

4. This service is a "line" service and therefore cannot be assigned to subscribers with trunk terminations (i.e., PBX with DID). This service is also unavailable to customers with the following types of lines: multiparty, hotel/ motel, coin and coinless public, 1A ESS remote switching system lines (RSS) and Centrex attendant with console. In addition, because of the special ringing, this service may not work where channel banks (FX service), MFTs or bridge lifters are used (depending on circuit design).

5. The ringing tone and the call waiting tone that a customer hears have a short-long-short pattern. Some telephone companies use this pattern for more than one service.

6. There are certain digital loop carrier plug-ins that will not transmit the required distinctive ringing.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

7. References:

- TR-TSY-000219 CLASS^{SM} Feature: Distinctive Ringing/Call Waiting, FSD 01-01-1110 (A Module of LSSGR, FR-64), Issue 2, November 1988, Revision 1, May 1992.

- TR-NWT-000220, CLASS^{SM} Feature: Screening List Editing, FSD 30-28-0000 (A Module of LSSGR, FR-64), Issue 3, December 1993.

Distinctive Ringing - Terminating Screening (1069)

Distinctive Ringing - Terminating Screening (non-CLASS[SM]) provides individual ringing signals for customers who have multiple directory numbers (DNs) assigned to a single line appearance of a circuit switch. One DN is designated as the "master" DN and receives regular ringing. Additional DNs associated with the single line appearance receive distinctive ringing signals.

Generic Name of ONA Service	Product Name	BSE or CNS
Distinctive Ringing - Terminating Screening	AM - Call Identification/Multi-Ring Svc.	CNS
	BA - Identa-Ring®	CNS
	BS - RingMaster®	CNS
	NX - RINGMATE®	CNS
	SWB - Personalized Ring[SM]	CNS
	USW - Custom Ringing	CNS

FEATURE OPERATION:

1. A customer may request from the telephone company that up to four Directory Numbers (a primary and three secondary) be assigned to their line. A service order is required.

2. Once provisioned, a unique ringing pattern is applied to the customer's line for each of the assigned directory numbers dialed by the calling party. The calling party always hears a normal audible ringing pattern.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE9	5E4	BCS25

2. This service is only available on single party lines with superimposed ringing.

[SM] CLASS is a service mark of Telcordia Technologies, Inc. (formerly Bellcore)

® Identa-Ring is a registered service mark of Bell Atlantic.

® RingMaster is a registered trademark of BellSouth.

® RINGMATE is a registered service mark of NYNEX.

[SM] Personalized Ring is a service mark of Southwestern Bell Telephone Company.

3. The primary number (PDN) receives normal ringing. Ringing patterns for the secondary numbers (SDNs) is as follows:

SDN1 - 2 long rings

SDN2 - 2 short rings, 1 long ring

SDN3 - 1 short ring, 1 long ring, 1 short ring

4. Customers with Call Waiting will receive a unique Call Waiting tone for each directory number dialed.

5. Customers with Call Forwarding - Variable may have the option at subscription of being able to forward only the primary number or forwarding all directory numbers upon service activation.

6. If other Call Forwarding features are assigned to the primary number, they are also provided for the secondary numbers.

7. Originating Custom Calling features such as Three Way Calling or Speed Calling can be assigned to the primary number only.

8. References:

- TR-TSY-000520 Features Common To Residence and Business Customers I, FSD 00-00-0000 to FSD 01-01-1000 (A Module of LSSGR, FR-64), Issue 2, July 1987 [See FSD 01-01-1000]
- BellSouth Reference TR-73534 Description of the Network Interface to RingMaster® Service, Issue B, February 1991.

® RingMaster is a registered trademark of BellSouth.

Faster Signaling On DID (1094)

Faster Signaling On DID provides the customer with improved call completion efficiencies for calls that terminate to DID trunks. Two methods are currently available to provide the ESP with faster signaling, Multi-Frequency (MF) and Dual Tone Multi-Frequency (DTMF) address signaling. Each of these methods provides improvements relative to Dial Pulse (DP) signaling in terms of the holding time required for digit outpulsing to the ESP's PBX during call routing. This equates to reduced holding times for DID trunks and is perceived by the ESP to reduce the number of DID trunks required to handle its traffic.

Generic Name of ONA Service	Product Name	BSE or CNS
Faster Signaling On DID	BA - Faster Signaling On DID	BSE*
	BS - Faster Signaling On DID	BSE or CNS
	NX - Faster Signaling On DID	BSE
	USW - Called Directory Number Delivery (DID)	BSA**

FEATURE OPERATION:

A call is placed to a number terminating on a DID trunk. The Central Office determines through translations that this DID trunk group requires either MF or DTMF signaling. The appropriate equipment (and software) is utilized to outpulse the digits to the DID system in the proper format.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS19

2. The digital switches (5ESS and DMS-100) provide this feature as an inherent part of the switch, utilizing the appropriate time slots to furnish the MF or DTMF signal to the DID PBX. The 1A ESS requires hardware (MF or DTMF transmitters) and software (9SHLTO if DTMF) to provide this feature.

3. References:

   - SR-2275 Bellcore Notes On The Networks, Issue 3, December 1997 (replaces SR-TSV-002275, Issue 2).

This service, if offered as a BSE, is associated with the Circuit Switched Line or Trunk basic serving arrangement, as stated in the individual ONA plans.

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* Standard Option

** For U S WEST this capability is a DID service alternative.

Flexible ANI Information Digits (1058)

The flexible ANI information digit assignment feature permits the association of supplementary information digits with specific calling party classes of service (e.g., coin phone, hotel/motel, and prison service). The purpose of flexible ANI information digits is to provide information about the calling party's directory number which may be useful to ESPs for billing and/or screening of calls. Flexible ANI information digit assignments are made by Lockheed-Martin as part of its North American Number Plan administration responsibilities.

Generic Name of ONA Service	Product Name	BSE or CNS
Flexible ANI Information Digits	AM - Flexible ANI	BSE
	BA - Flexible ANI	BSE
	BS - ANI	BSE
	NX - Flexible ANI	BSE
	SWB - Flex ANI	BSE
	USW - Flexible ANI	BSE

FEATURE OPERATION:

Flexible ANI applies to interoffice calls that send two digit ANI information via Equal Access Multi-Frequency Signaling, Common Channel Signaling or Modified Operator Services Signaling. When Flexible ANI digits apply to a class of service, they will be outpulsed instead of hard-coded class of service ANI pairs. Being able to associate flexible ANI pairs to originating line class of service translations provides the capability for the terminating switch to identify more classes of lines. In addition, associating flexible ANI pairs with the routing translations for ESP services provides an efficient method for ESPs to identify when customers are attempting to use those services. The ANI pairs are transmitted as part of the ANI signaling sequence and are used by the receiving switch to identify the type of originating line or the type of call being made.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE11.03	5E6	BCS27

2. The Circuit Switched Trunk type BSA with FG D protocol in-band signaling interface will support this BSE. It can be supported via either a direct or tandem trunk arrangement.

3. Flexible ANI can only be assigned to the Circuit Switched Trunk type BSA that has the Calling Billing Number Delivery (ANI) BSE assigned as an option.

4. References:

   - LSSGR FR-64 (formerly FR-NWT-000064), Flexible ANI Information Digit Assignment FSD 20-20-0100, Issue 1, September 1989, Module TR-TSY-000685.

This service, if offered as a BSE, is associated with the Circuit Switched Trunk type BSA.

Hot Line (1070)

This automatic dialing feature provides the customer with the ability to automatically be connected with another line on the circuit switched network. When the customer's station goes off-hook, a switched connection is set up without any further user action.

Generic Name of ONA Service	Product Name	BSE or CNS
Hot Line	BA - Hot Line	CNS
	BS - Hot Line	CNS
	NX - Hot Line	BSE or CNS
	PB - Direct Connection	CNS
	SWB - Hot Line	CNS
	USW - Hot Line	CNS

FEATURE OPERATION:

1. A subscriber to this service, upon going off-hook to initiate a call, will be automatically connected to a single predetermined number. No digits dialed by the subscriber will be accepted by the Central Office switch.

2. The service, including the predetermined number, is activated via a service order with the telephone company. Changes in the predetermined number can only be made via an additional service order.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS23

2. The predetermined number can be any valid seven to fifteen digit number.

3. Incoming calls are unaffected by this service.

4. A subscriber to Hot Line cannot have other originating features on the same line (i.e., Speed Calling, Warm Line, Call Forwarding, Three-Way Calling, Call Transfer).

5. References:

   - TR-TSY-000562 Manual Line Features, FSD 01-02-0301 (A Module of LSSGR, FR-64), Issue 1, May 1990.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Message Waiting Indicator (MWI) - Ability To Receive Audible Message Waiting (1073)

With this capability, the ESP's client can receive the audible message waiting signal, i.e., stutter dial tone (or recall dial tone), when activated by the ESP. This capability is a client option. The line should be programmed with this feature in order for the client to receive stutter dial tone (message waiting tone).

To activate or deactivate the stutter dial tone on the client's line with the ability to receive audible message waiting, the ESP uses an SMDI data link to the central office switch.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator (MWI) - Ability To Receive Audible Message Waiting	AM - Message Waiting Tone	CNS
	BA - Messaging Services Interface	CNS
	BS - Message Waiting Indication - Audible	CNS
	NX - SMDI	CNS
	PB - Message Waiting Indicator	CNS
	SWB - Customer Alerting Enablement	CNS
	USW - Message Waiting Indication - Audible	CNS
	USW - Message Waiting Indication - Aud/Vis(8037)	CNS

FEATURE OPERATION:

1. Once the MWI feature is assigned to the ESP's client's line, there is no required action by the client to activate/ deactivate the feature.

2. Any ESP can turn off/on a client's Message Waiting Indicator providing they reside in the same Central Office as the client.

3. With appropriate line translations in Stored Program Control switches, an ESP can turn on or off a special recall dial tone (stutter dial tone) to notify their clients of an awaiting message. Whenever the client attempts to originate a call, the client receives stutter dial tone. This indicates to the client that a message(s) has been received by the ESP for the client. The client will receive stutter dialtone each time he attempts to originate a call until the ESP sends a message to the switch to remove the stutter dialtone (MWI).

4. An ESP's client can use call forwarding busy line (CFBL), call forwarding don't answer (CFDA), or call forwarding variable (CFV) to forward their calls to the ESP.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E4.2*	BCS29**

Note: * In the 5ESS, this feature requires the non-standard pre-ISDN arrangement using the ISDN 1 Message AP/ACP or 3A translator with the 5E4.2 Generic.

Note: ** In the DMS-100, BCS29 supports this feature on Residential Enhanced Services (RES).

2. This feature can only be offered on an Intraoffice basis.

3. References:

   - For MWI: TR-NWT-000283, Simplified Message Desk Interface (SMDI) Generic Requirements, FSD 05-02-0150 (A Module of LSSGR, FR-64), Issue 2, May 1991, Supplement 01 - December 1991.

   - Recall dial tone (stutter dial tone) described in GR-506 LSSGR: Signaling For Analog Interfaces, (A Module of LSSGR, FR-64), Issue 1, June 1996, Revision 1 - November 1996 (replaces TR-TSY-000506, Issue 3).

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Message Waiting Indicator (MWI) - Ability to Receive Visual Message Waiting(1074)

With this capability, the ESP's client can receive a visual alerting signal from the ESP. This capability is a subscriber option. The visual MWI is a device with an illuminating lamp that is controlled by signals received via the client's line from the appropriately equipped central office switches.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator (MWI) - Ability To Receive Visual Message Waiting	BA - Messaging Services Interface	CNS
	BS - Station Message Waiting Lamp Indication	CNS
	PB - Electronic Business Set Message Waiting	CNS
	USW - Message Waiting Indication - Visual	CNS
	USW - Message Waiting Indication - Aud/Vis(8037)	CNS

FEATURE OPERATION:

MWI - Ability to Receive Visual Message Waiting is a central office software and hardware capability that allows a subscriber, with special CPE, to have a lamp or LCD flash at 60 IPM when there are messages waiting at their message bureau, and be turned off to indicate that there are no messages.

This feature is activated/deactivated by the ESP who uses an SMDI-type data link to the central office switch. A customer's lamp or LCD is activated on their CPE when an ESP sends a signal to the central office to apply 130 volts to the customer's lamp. The ESP (Voice Mail provider, other message provider, etc.) would send an additional signal after the messages have been retrieved by the clients to remove the 130 volts from their client's lamp.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8	5E4.2* * ISDN	BCS29

2. The lamp is off when the subscriber is off-hook or there are no messages queued and the subscriber is on-hook.

3. This capability requires a specialized line card.

4. References:

   - U S WEST reference publication 77335 - "Message Waiting Indication - Visual," Issue A, September 1990.

Multiline Hunt Group (1077)

Multiline Hunting provides a software-defined search for an idle terminal to which a call can be completed. When calls are placed to a Multiline Hunt Group, hunting begins with a member designated by the dialed directory number and hunts sequentially through the group until an idle member is found or the end of the designated list is encountered. If no idle member is found, busy tone is returned to the calling party. Several types of hunting arrangements are available: Regular Hunting, Circular Hunting, and Preferential Hunting.

Preferential hunting provides individual terminals in a hunt group a "preferential list" that consists of any terminals in the hunt group to be hunted in any sequence. If the telephone number of the called line is found busy, the preferential list is sequentially hunted for an idle line. If all the terminals in the preferential list are found busy, the last number of the preferential list is the start hunt telephone number for the regular or circular hunt group. The effect is to make a hunt group member the "pilot" of it's own hunt group.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group	AM - Circular Multiline Hunt Group	BSE
	AM - Multiline Hunt Group Overflow	BSE
	AM - Preferential Hunting	BSE
	AM - Regular Multiline Hunt Group	BSE
	BA - Hunting Service Arrangements	BSE
	BA - Hunting Service Arrangements:Circular (3023)	BSE
	BA - Hunting Service Arrangements:Preferred (3024)	BSE
	BS - Multiline Hunt Groups	BSE or CNS
	NX - Hunt Groups	BSE
	PB - Hunt Group Arrangement	BSE
	SWB - Multiline Hunt Group	BSE
	USW - Hunting	BSE

FEATURE OPERATION:

The Regular Line Hunting capability offers a hunting arrangement in which hunting begins with the terminal number associated with the called number and continues sequentially through the last terminal number in the Multiline Hunt Group where the hunting is stopped.

The Circular Line Hunting capability offers a hunting arrangement in which hunting begins with the terminal number associated with the called number and continues sequentially through the last terminal number in the Multiline Hunt Group where hunting resumes at terminal 1 and continues through the terminal preceding the start hunt terminal.

The preferential hunting arrangement allows a prehunt over a subset or preferential list of terminals before hunting through the hunt group. The hunt group can be either a circular or regular hunt group. All terminals in the group can have their own preferential list. When a call is to terminate to a group with preferential hunting, the address of the preferential list is obtained and conditional hunting is performed. The first terminal in the list is examined, and if idle, an attempt is made to terminate the call. If busy, the next terminal in the preferential list is examined and so on until an idle terminal is found. If an idle line is not found, then the last terminal in the list is used as the start hunt number into the regular or circular hunt group. A regular or circular hunting is performed, and if no idle terminal is found via a search through the entire group, the calling party receives busy tone.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	**1A ESS**	**5ESS***	**DMS-100**
Earliest Generic Release	1AE8A	5E2(2)	BCS17

Note: * Regular and Circular Hunting only are available in the 5ESS switch.

2. These Hunting features are compatible with the majority of Distinctive Ringing, and Three-Way Calling features in the 1A ESS, 5ESS and the DMS-100 switches. The Call Forwarding features are compatible with the hunting techniques in the 1A ESS and 5ESS switches.

3. The Call Waiting feature is compatible with preferential hunting in both the 1A ESS and the DMS-100.

4. In the 1A ESS, the preferential list can have a maximum of 18 terminals assigned to be hunted before returning to the hunt group. In the DMS-100, the preferential list can have a maximum of 19 terminals assigned, including the pilot number, to be hunted before returning to the hunt group.

5. In the DMS-100, preferential hunting is compatible with the Distributed Hunt Number feature.

6. References:

   - TR-TSY-000569 Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, May 1990.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - C. O. Announcements (1078)

The delay announcement for queued calls on hunt group feature provides various options for handling incoming callers to a multiline hunt group that is subject to queuing. The basic queuing service provides only for audible ringing tone treatment for waiting callers. This feature allows timed audible ringing tone followed by a customer-selected (e.g., ESP-selected) combination of announcements separated by silence, music, or audible ringing tone. The announcements are standard call progress type announcements, not ESP-programmed announcements. Answer supervision is returned toward the calling party after timed audible tone when the first announcement begins.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - C. O. Announcements	AM - Central Office Announcements	BSE
	BA - Delay Announcements	BSE
	BS - Multiline Hunt Queuing	BSE
	BS - Queuing (Access)	BSE
	NX - Queuing/UCD	BSE or CNS
	PB - Hunt Group - C.O. Announcements	BSE
	SWB - Recorded Announcements	BSE
	USW - Uniform Call Distribution	BSE

FEATURE OPERATION:

The delay announcement feature provides for automatic routing of incoming calls to multiline hunt groups to one or more pre-recorded announcements when the call is not serviced within a preset time interval.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS17

2. 1A ESS Switch:

   The following optional capabilities are available, depending upon switch/generic type, with the delay announcement feature: Fixed Delay announcement, Flexible First Delay announcement, Variable Length Delay announcement, Service After Delay Announcement, Delay Announcement Improved Billing, and Selective Delay Announcement.

   UCD customers using Delay Announcement must have queuing.

Customers can specify a length of time for incoming calls to be in queue before the Delay Announcement is activated.

Queuing can be zero seconds so that every caller receives an announcement.

Customers may have up to four different Delay Announcements.

Queuing timing begins after callers receive each announcement.

Announcement access trunks are required and must be traffic engineered for each customer.

Separate announcement access trunks are required for each Delay Announcement.

3. 5ESS Switch:

The following options are available, depending upon switch/generic type, with the delay announcement feature: Initial Tone treatment, Initial Delay Interval after Delay Announcement, Delay Interval between Delay Announcements, Delay Announcement Length, and Flexible First Delay Announcement.

There is a capability for four delay announcements in the 5ESS Switch. The 5ESS Switch has the capability to provide Inter delay (between announcements) timing, maximum of eight delays, tones and the number of cycles, up to 3, that a recording can play.

4. DMS-100 Switch:

Multiline Hunting queuing functionality is available via Uniform Call Distribution (UCD) in the Northern Telecom Inc. switching machines. Currently, a UCD is assigned to a Meridian Digital Centrex environment. Where there are more incoming calls than agents to serve them, delay will be encountered before the calls are answered. There is a maximum of three delay announcements available to the ESP. A recorded announcement advising of the delay will be provided when a delay threshold is exceeded. The delay threshold is a customer option for the NTI UCD.

5. References:

- TR-TSY-000569 Multiline Hunt Service, FSD 01-02-0802 (A Module of LSSGR, FR-64), Issue 1, May 1990.

This service, if offered as a BSE, is associated with the Circuit Switched Line basic serving arrangement.

Multiline Hunt Group - Individual Access To Each Port In Hunt Group (1079)

Individual access to each port in a hunt group allows each line in a multiline hunt group (including the lead line) to be assigned a separate non-hunt directory number.

Generic Name of ONA Service	Product Name	BSE or CNS
Multiline Hunt Group - Individual Access To Each Port In Hunt Group	AM - Non-Hunting Number For Use With Hunt Group Arrangement or UCD Arrangement	BSE
	BA - Non-Hunt Directory Numbers	BSE
	BS - Multiline Hunt Groups	BSE or CNS
	BS - Nonhunting Number for use with Hunt Group or UCD Arrangement (Access)	BSE
	NX - Hunt Groups	BSE or CNS
	PB - Nonhunting Number Arrangement	BSE
	SWB - Nonhunting Number Arrangement	BSE
	USW - Hunting	BSE

FEATURE OPERATION:

When the non-hunt directory number is dialed, a call is placed only to the designated number. If the number is busy, the call will not route to other members of the hunt group, and a busy signal is returned.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Individual access to each port in a hunt group is available in the following central office switches:

Switch Type	1A ESS	5ESS	DMS-100
Earliest Generic Release	1AE8A	5E2(2)	BCS25

2. In the 1A ESS switch this feature can be assigned with the following constraints:

   Each terminal number must be assigned its own Directory Number.

   Queuing of Lines will not be allowed.

   Stop Hunt Keys are not permitted.

3. In the DMS-100 this feature can be satisfied by using either Distributed Line Hunting or the Multiline Hunt Group Feature in conjunction with the Bridged Night Number feature. The Individual Access to Each Port in a Hunt Group feature is not compatible with the Universal Call Distribution hunting arrangement in the DMS-100.

4. Call Waiting - Terminating and Call Forwarding features should not be assigned to the non-hunt directory number.