Derived Channels (Monitoring) (1032)

This capability provides an ESP's client with a connection via low-speed derived channel to a scanning device located in the central office. The scanning device communicates with a subscriber terminal unit (STU) on the ESP client's premises. The scanner transmits to the ESP (1) alert signals from the STU and (2) notification of breaks in the subscriber's local loop. Breaks can generally be detected within a 30- to 90-second interval.

Generic Name of ONA Service	Product Name	BSE or CNS
Derived Channels (Monitoring)	AM - Notification of Subscriber Line Breaks	CNS
	BA - REACT[SM]	CNS
	BS - WATCHALERT[®]	CNS
	NX - PULSENET[SM]	CNS
	PB - POLLSTAR[SM]	CNS
	PB - ALARM PLUS [SM]	CNS
	USW - ScanAlert[SM]	CNS

FEATURE OPERATION:

1. ESP clients with this capability will have their line connected to a scanning device in the central office upon receipt of an order by the telephone company.

2. A Subscriber Terminal Unit (STU) is placed on the client's premises by the ESP and is connected to the line and the client's alarm sensor.

3. The scanner will periodically poll each client's line for a supervisory low tone. The tone status will indicate a line outage, alarm, or if the line is okay.

4. Upon detection of a line outage or an alarm signal, the scanner will transmit an alarm message to a telephone company provided host computer which then transmits the alarm message to the appropriate ESP over a private line connection.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of the central office switch type.

2. The client's line must be one-party.

3. This service may not work when certain range extension or subscriber carrier equipment is used on the client's line (end to end metallic facilities may be required).

[SM] REACT is a service mark of Bell Atlantic Corporation.

[®] WATCHALERT is a registered service mark of BellSouth Corporation.

[SM] PULSENET is a registered service mark of NYNEX.

[SM] POLLSTAR is a service mark of Pacific Bell. ALERT PLUS is a service mark of Nevada Bell.

[SM] ScanAlert is a service mark of U S WEST.

4. The STU must be connected to the client's line using an appropriate interface device. The STU and clients other CPE must be compatible with the central office scanner.

5. The coded low tone transmitted by the STU is at 37 Hz frequency.

6. Polling of the client's line varies from approximately every 6 seconds to approximately every 30 seconds depending on the type of scanner deployed by the telephone company.

7. The ESP connection to the telephone company host computer is via a 3000 series private line.

8. References:

   - Ameritech reference AM TR-MKT-000038 Ameritech Scan-Alert Transport Service Deployed With Base 10 Technology, Issue 1, May 1989.

   - BellSouth technical reference TR-73518 Description of the Network Interface for WATCHALERT® Service, October 1988.

   - BellSouth technical reference TR-73530 Description of the Network Interface at an Alarm Agency to WATCHALERT® Service, June 1989.

   - U S WEST Document 77333 U S WEST Alarm Signaling Transport - Scan-Alert℠, Issue A, July 1992.

This service, if offered as a BSE, may be associated with the Dedicated Voice Grade and Dedicated Alert Transport basic serving arrangements.

® WATCHALERT is a registered service mark of BellSouth Corporation.
℠ Scan-Alert is a service mark of U S WEST.

Extended Superframe Conditioning (1033)

This feature enables the ESP to access up to 4 kbps of an 8 kbps extended superframe (ESF) data channel in a properly equipped Dedicated High Capacity Digital (1.544 Mbps) service for control and performance monitoring of the end-to-end service. Within the 8 kbps ESF conditioning data channel, the remaining 4 kbps are reserved for terminal synchronization and cyclic redundancy checking.

Generic Name of ONA Service	Product Name	BSE or CNS
Extended Superframe Conditioning	AM - Access To Extended Superframe Data Channel	BSE
	BA - High Capacity Digital Service	BSA *
	BS - Dedicated High Capacity Digital (1.544 Mbps)	BSA *
	NX - Access to Extended Superframe Data Channel	BSA *
	SWB - Extended Superframe Format	BSE
	USW - Access To Extended Superframe Data Channel	BSA *

FEATURE OPERATION:

ESF is an optional DS1 bit stream framing method available to the customer who purchases a high capacity 1.544 Mbps service. The overhead bits in the 1.544 Mbps bit stream are used for performance monitoring of the DS1 line. ESF extends the DS1 superframe structure from 12 to 24 frames and divides the framing bit previously used for basic frame synchronization into channels for redundancy checks, data link and framing. ESF creates additional channel capacity that can be made available for various network and customer functions.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This service requires a customer to obtain a DS1 high capacity 1.544 Mbps channel.

2. The DS1 equipment must have the ESF option capability. New vintage D4 and D5 channel bank equipment has ESF as an available option.

3. References:

   - GR-499, Transport Systems Generic Requirements (TSGR): Common Requirements (A Module of TSGR, FR-440), Issue 2, December 1998 (replaces TR-NWT-000499, Issue 5).

This service, if offered as a BSE, may be associated with the Dedicated High Capacity Digital (1.544 Mbps) basic serving arrangement.

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* For Bell Atlantic, BellSouth, NYNEX and U S WEST, this is an alternative of the Dedicated High Capacity Digital BSA.

Route Diversity (1096)

Route Diversity provides an increased safety factor for ESP facilities that could be subject to disruption from cable cuts and other unavoidable catastrophes. It provides for diverse routing when necessary in order to comply with special ESP requirements.

Generic Name of ONA Service	Product Name	BSE or CNS
Route Diversity	AM - Special Facilities Routing	BSE
	BA - Route Diversity	BSE
	BS - Route Diversity	BSE or CNS
	NX - Special Facilities Routing	BSE
	SWB - Diversity	BSE

FEATURE OPERATION:

Three example serving arrangements provide the desired overall special facilities routing:

1. Local Diversity provides a transmission path for services between the customer's designated premises and the serving wire center that is diverse from the normal transmission path.

2. Inter Wire Center Diversity provides a transmission path diverse from the normal path, for services between a set of wire centers.

3. The Serving Wire Center Avoidance arrangement provides a transmission path for services between the customer's designated premises and a wire center which is not normally the serving wire center.

This capability is provided with the following conditions in mind: diversity involves providing services over different physical routes, and avoidance involves providing one or more services on a route which avoids specific geographic locations.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of central office switch type.

2. The diversity may consist of separate facilities within the same sheath, facilities in separate sheaths over the same facilities route, or entirely separate facility routes.

3. All route diversity combinations are not available for all ESP locations. ESPs desiring route diversity should contact their LEC account representative to determine what is available to them.

4. Reference:

   - Traffic Routing Administration Catalog of Products - LERG Southwestern Bell area data, LATAs 5XX.

This service, if offered as a BSE, is associated with all basic serving arrangement types. To avoid duplication, it is listed in this section only.

Secondary Channel Capability (1034)

The secondary channel feature provides the customer with access to a low speed monitoring channel associated with a primary dedicated digital private line channel. The secondary channel simultaneously transmits at a lower bit rate.

Generic Name of ONA Service	Product Name	BSE or CNS
Secondary Channel Capability	AM - Secondary Channel	BSE
	BA - Secondary Channel	BSE
	BS - Secondary Channel Capability	BSE or CNS
	NX - Diagnostic Channel On DS0 Lines	BSE
	PB - Secondary Channel	BSE
	SWB - Secondary Channel Capability	BSE
	USW - Secondary Channel	BSE

FEATURE OPERATION:

The secondary channel capability offers a companion digital transmission channel independent of the primary channel and at a lower bit rate.

The basic dedicated digital private line offers two-point and multi-point synchronous full duplex data transmission at 2.4 Kbps, 4.8 Kbps, 9.6 Kbps and 56 Kbps. Secondary channel data transmission rates are subrates of the basic dedicated digital private line speeds, i.e., 133 bps, 266 bps, 533 bps and 2.666 Kbps. The secondary channel will utilize the same basic network equipment and transmission facilities as the primary channel and will have comparable quality.

A 2-point circuit connects two customer stations in a balanced mode of operation.

From different remote stations on a multipoint circuit, transmission on the primary and secondary channels are independent of each other, that is, a remote station can communicate with the control station on the primary channel while another station simultaneously transmits on the secondary channel to the control station.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The customer's overall performance will depend on the characteristics of the CPE and customer premises cabling that is provided and maintained by the customer, as well as those of the DDS network. These performance objectives are attainable if the CPE connected to the DDS network meets the requirements of TR-NPL-000157.

2. Due to use of the same network equipment and transmission facilities for related primary and secondary channels, the quality of the related channels should be approximately equal.

3. Multipoint capability may not be available in all locations.

4. Note that some LECs may not offer this feature in conjunction with the Category 3, Type K - Dedicated Digital (64 Kbps) BSA.

5. References:

   - TR-NPL-000157 Secondary Channel in the Digital Data System: Channel Interface Requirements, Issue 2, April 1986.

This service, if offered as a BSE, is associated with the Dedicated Digital (< 64 kbps) basic serving arrangement.

Statistical Multiplexer (1035)

This capability provides the ESP with access to a more efficient form of time division multiplexers that work by a dynamic allocation of time slots. Multiple data streams can be multiplexed into a single high speed data stream on a single link. Statistical multiplexing requires CPE that is compatible with the central office based multiplexing equipment. Such multiplexing must be transparent to the speed, code and protocol of the user's data signal; protocol conversion is not to be provided by such equipment.

Generic Name of ONA Service	Product Name	BSE or CNS
Statistical Multiplexer	BA - Statistical Multiplexer in C.O.	BSE

FEATURE OPERATION:

There is no activation required by the ESP once the service is established. As part of establishing the service, it must be verified that the ESP's equipment and the central office equipment are compatible.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Present statistical multiplexers use a proprietary protocol that is particular to each vendor. Therefore, each vendor's statistical multiplexer will communicate only with equipment that uses that vendor's protocol.

2. There are no feature interactions. This capability is used only as a transport medium from the ESP to the central office.

3. References:

   - No generic reference documents available.

This service, if offered as a BSE, is associated with the Dedicated Digital (< 64 kbps) basic serving arrangement.

Verify Integrity of Subscriber Lines (1036)

This capability allows an ESP to be signaled by central office equipment every 60 seconds or less to report on the integrity of the ESP's client's lines that are being monitored for breaks. Scanning equipment located in the central office and equipment located on the ESP's client's premises check the client's line within 60-second intervals. If the ESP's client's line has been disabled, the BOC central office equipment will automatically notify the ESP of its client's line disablement.

Generic Name of ONA Service	Product Name	BSE or CNS
Verify Integrity of Subscriber Lines	AM - Notification of Subscriber Line Breaks	CNS
	AM - Detection of Subscriber Line Breaks	BSA *
	NX - PULSENET[SM]	BSA
	PB - POLLSTAR[SM]	BSE
	PB - ALARM PLUS[SM]	BSE
	USW - ScanAlert[SM]	CNS

FEATURE OPERATION:

1. ESP clients with this capability will have their line connected to a scanning device in the central office upon receipt of an order by the telephone company.

2. Compatible CPE is placed on the client's premises by the ESP and is connected to the telephone line.

3. The scanner will periodically poll each client's line for a signal. Lack of a signal will indicate a line break.

4. Upon detection of a line break, the scanner will transmit a report to the ESP over a dedicated link or a dial-up connection.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This service is independent of central office switch type.

2. The client's line must be one-party service.

3. This service may not work when certain range extension or subscriber carrier equipment is used on the client's line.

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* This capability is inherent with Alarm Services (DNAL) for Ameritech.

[SM] PULSENET is a registered service mark of NYNEX.

[SM] POLLSTAR is a service mark of Pacific Bell, ALARM PLUS is a service mark of Nevada Bell.

[SM] ScanAlert is a service mark of U S WEST.

4. References:

- Ameritech - AM-TR-MKT-000038
- Ameritech - AM-TR-MKT-000039
- U S WEST - Document 77333 - U S WEST Alarm Signaling Transport - ScanAlert[SM], Issue A, July 1992

This service, if offered as a BSE, may be associated with the Dedicated Alert Transport or Dedicated Network Access Link basic serving arrangements, as stated in each individual ONA plan.

[SM] ScanAlert is a service mark of U S WEST.

4. Technical Descriptions for Dedicated Network Access Link Serving Arrangements

Automatic Circuit and Trunk Monitoring Service *

* This service has been deleted by U S WEST based on availability of updated information, after the July 1991 issue of the ONA Services User Guide.

Calling Directory Number Delivery - via BCLID (1063)

Calling Directory Number Delivery - via BCLID (CDND/BCLID) will allow the Centrex, Multiline Hunt Group (MLHG) or PBX with DID customer to receive call-related information on calls that are received from outside the Centrex group, MLHG or PBX. The information is transmitted over a dedicated data channel.

Generic Name of ONA Service	Product Name	BSE or CNS
Calling Directory Number Delivery - via BCLID	BA - Bulk Caller Line Identification	BSE
	BS - Call Tracking - BCLID	BSE
	PB - Bulk Calling Line Identification (BCLID)	BSE
	USW - Calling Number Identification (BCLID)	BSE

FEATURE OPERATION:

The customer must contact the telephone company to have the CDND/BCLID service initiated. A service order is required. This service is initiated on an individual customer basis for a PBX customer and on a customer group basis for a Centrex or MLHG customer. Parameter changes and possible hardware installation are required. In addition, the customer will require CPE (e.g., a TTY, minicomputer, etc.) capable of receiving the ASCII formatted signaling that will be sent over a dedicated data channel. Once the service is initiated it will remain activated continuously until a request is made to discontinue the service.

The output message containing the CDND/BCLID data goes over the dedicated data channel to the customer before ringing is applied to the called line. The transmitted information is as follows:

- CDND/BCLID Identifier
- The date of the call
- The time the call was made
- The calling directory number
- The line multistatus ("M" for PBX", MLHG, etc. and "T" for true DN)
- The called directory number or terminal number and group number
- The busy/idle status of the called directory number

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	1A ESS
Earliest Generic Release	1AE10*

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

2. The serving central office switch must be equipped with the appropriate CLASS[SM] CDND/BCLID software and hardware. In order to provide call related information 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. This service is only offered on an intraLATA basis at this time.

3. When a customer has more than 10,000 calls per CDND/BCLID channel per hour, call related data for some calls may be lost.

4. Each CDND/BCLID directory number can have only one primary input/output channel and one backup channel to the 1A ESS switch.

5. A PBX customer that wants to subscribe to BCLID must be assigned to a multiline hunt group or must be a PBX with DID.

6. CDND/BCLID output is not stored in the switch, therefore CPE must be available to collect the information.

7. The customer cannot activate or deactivate this service, it must be done via the service order process.

8. References:

   - TR-NWT-000032 CLASS[SM] Feature: Bulk Calling Line Identification, FSD 02-02-1280 (A Module of LSSGR, FR-64), Issue 2, September 1991, Revision 1, December 1991.

This service may be associated with the Dedicated Network Access Link or Circuit Switched Line basic serving arrangements, as stated in each individual ONA plan.

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

Make Busy Key (1071)

This capability is provided via a dedicated link connected to a line scan point or equivalent, and is associated with a MLHG, DID or equivalent. By activating an ESP provided key at the ESP end of this link, the ESP can place one or more lines or trunks in a busy or overflow condition. Subsequent calls may either be directed to a tone, announcement or possibly an alternate route.

Generic Name of ONA Service	Product Name	BSE or CNS
Make Busy Key	AM - Make Busy Arrangements	BSE
	BA - Make Busy Arrangements	BSE
	BS - Subscriber Transfer Service/Break In Rotary	BSE or CNS
	BS - Make Busy/Night Transfer (Access)	BSE
	NX - Night Transfer	BSE or CNS
	NX - Trunk Group Make Busy	BSE
	PB - Availability Control Arrangement	BSE
	SWB - Remote Make Busy	BSE
	SWB - Remote Make Busy - Trunk Side	BSE
	USW - Make Busy	BSE

FEATURE OPERATION:

1. The customer (ESP) requests this service and the associated Dedicated Network Access Link (DNAL) from the telephone company via service order.

2. The ESP must specify which line(s), trunk(s), group of lines or group of trunks is to be associated with the service.

3. Upon activation of a customer provided key, or similar device, the associated lines or trunks will be placed by the central office switch in a busy condition. The lines or trunks remain in the busy conditions until released by the customer.

4. Calls to busy lines or trunks will receive normal busy condition treatment which may include tones, announcements or alternate routing including call forwarding.

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. A line or trunk may be associated with only one key.

3. Originating service is not affected by key activation.

4. The maximum number of lines or trunks that can be controlled via a single key varies by switch type.

5. Normal operation of the alternate routing or various Call Forwarding capabilities is not affected by this service.

6. References:

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

This service, if offered as a BSE, may be associated with the Dedicated Network Access Link or Circuit Switched Line basic serving arrangement, as stated in each individual ONA plan.

Message Desk (SMDI) (1072)

This capability will provide the ESP with real time call status information on telephone calls that are terminated to a multiline hunt group. The information delivered in this package includes the following:

MLHG and terminal identification of call handler, call reason (call forward type or direct call), original calling directory number, and originally called number in the forwarding situation.

The call status information is transported from the serving central office via a data link to the ESP message desk terminal equipment.

If the ESP has a MLHG and an associated SMDI (Simplified Message Desk Interface) data link, the ESP will get both the call status information and the ability to activate the message waiting indicator. Current limitations require the ESP to obtain a MLHG and a dedicated data access link to interface with every switch in which the ESP desires the capability to receive the call status information.

Multiple Users capability provides the delivery of calling number, called number, reason for forwarding of calls forwarded or placed to the ESP, identifies the multiline hunt group assigned to ESP customers (multiple users capability) and allows for the activation/deactivation of a stutter dial tone on the ESP's customer line. This allows the ESP to use one data link for multiple groups of end users and the activation of message waiting indicator. The reason for forwarding includes: Call Forwarding Busy, Call Forwarding Don't Answer, Call Forwarding Variable (forwarding of all calls), and Direct Call.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Desk (SMDI)	AM - Simplified Message Desk Interface	BSE
	AM - Simplified Message Desk Interface-Expanded	BSE
	BA - Messaging Services Interface	BSE
	BS - SMDI	BSE
	NX - SMDI	BSE
	PB - Forwarded Call Information	BSE
	PB - Forwarded Call Information - Multiple Users	BSE
	PB - Forwarded Call Information - Non Centrex	BSE
	SWB - Simplified Message Desk Interface	BSE
	SWB - Simplified Message Desk Interface - Expanded	BSE
	USW - Message Delivery Service	BSE

FEATURE OPERATION:

There is no required action by the ESP's customer to activate the SMDI feature. When an ESP customer's call is terminated to a MLHG served by the SMDI feature, call information including the called DN, the type of call forwarding used for the call, and the calling DN (intraoffice only) is delivered by way of a dedicated data link to the ESP. The ESP must then use some type of CPE to receive and interpret the SMDI data. If this CPE is equipped to display the client's account information to the attendant coincident with receipt of the client's call, the attendant can answer the call on a personalized basis using an appropriate answering phrase.

Message Desk provides the capability to initiate a request over the SMDI link to activate/deactivate the Message Waiting Indicator (MWI) on an individual client's line.

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. The ESP's CPE used to receive and interpret the SMDI data must use the same signaling, control, and data communications protocol as the telephone office Input/Output channel. This channel uses a standard Electronic Industries Association (EIA) RS232 asynchronous 1200 or 9600 baud ASCII interface.

4. Reference for SMDI:

   - TR-NWT-000283, Simplified Message Desk Interface (SMDI) Generic Performance Requirements, FSD 05-02-0150 (A Module of LSSGR, FR-64), Issue 2, May 1991, Supplement 1, December 1991.

This service, if offered as a BSE, may be associated with the Dedicated Network Access Link or Circuit Switched Line basic serving arrangement, as stated in each individual ONA plan.

[#] For Ameritech's AMSI-E service, this restriction does not exist. See Message Desk (SMDI) - Expanded in the Region Specific Section (Appendix 1) of this Guide for more information.

[&] For Southwestern Bell's Simplified Message Desk Interface - Expanded service, this restriction does not exist.

Message Desk (SMDI) - Expanded (1099)

The Message Desk (SMDI) - Expanded feature provides the 7 or 10 digit directory number of the voice messaging subscriber on calls forwarded by Call Forward Busy Line and Call Forward Don't Answer features to the message desk or Voice Message Provider's (VMP) Multiline Hunt Group (MLHG). The Message Desk (SMDI) - Expanded service will allow a message desk or a VMP to serve any station/subscriber within a Local Access Transport Area (LATA) from one host central office. The subscriber and the message desk or VMP must be served from central offices that are connected to the Common Channel Signaling System SS7 network.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Desk (SMDI) - Expanded	AM - Simplified Message Desk Interface-Expanded	BSE
	BA - Premier Messaging Services Interface	BSE
	BS - InterSwitch SMDI	BSE
	SWB - Simplified Message Desk Interface - Expanded	BSE
	USW - Message Delivery Service Interoffice	BSE

FEATURE OPERATION:

1. The message desk or VMP has the option of having 7 or 10 digit originating subscriber's directory numbers, as well as the reason the call is being forwarded, delivered to the message desk or VMP's Customer Premises Equipment (CPE). The information package to the message desk or VMP, delivered in real time over the Dedicated Network Access Link (DNAL), includes the MLHG and terminal identification of the call handler, call reason (call forward type or direct call), originating caller's directory number, and originally called number in the forwarding situation. Information will be passed over a DNAL when the CPE and the message desk or voice messaging subscribers are connected to the SS7 network. The message desk or VMP must have some type of CPE to receive and interpret the Simplified Message Desk Interface (SMDI) data.

2. The call forward type includes Call Forwarding Busy Line, Call Forwarding Don't Answer, Call Forwarding Variable (forwarding of all calls), and direct ESP call.

3. The DNAL may be utilized by the CPE to activate the stutter dial tone, more commonly known as the Message Waiting Indicator (See: Remote Activation of Message Waiting - Expanded, and/or Message Waiting Indicator - Ability to Activate Audible/Visual Message Waiting).

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*	5E7*	BCS30*

* ESP and End User's serving central offices must be interconnected with SS7.

2. The ESP's CPE used to receive and interpret the SMDI data must use the same signaling and data communications protocol as the telephone office Input/Output channel. This channel uses a standard Electronic Industries Association (EIA) RS232 asynchronous 1200 or 9600 baud ASCII interface.

3. Interconnection to the CPE is via standard outside plant cable, tip and ring connections.

4. Interface Description - Interface Between Customer Premises Equipment, Simplified Message Desk and Switching System: 1A ESS, Issue 1, July 1985.

5. References:

   - Ameritech Message Signal Interface (AMSI) and Ameritech Message Signal Interface - Expansion AM-TR-OAT-000065, Issue 1, July 1990.

   - Technical reference for Call Forwarding Busy Line and Call Forwarding Don't Answer can be found in TR-TSY-000586, Call Forwarding Subfeatures, FSD 01-02-1450, Issue 1, July 1989.

This service, if offered as a BSE, is associated with the Dedicated Network Access Link serving arrangement.

Message Waiting Indicator - Activation (Audible) (1075)

This capability allows an ESP to indicate to its subscriber that a message is waiting for retrieval. With this capability, the ESP can activate an audible signal, e.g., stutter dial tone, on the ESP's client's line.

Activation of message waiting can be provided in limited switch types. The technology used is the same technology which supports the SMDI product. The input/output (I/O) port is used to recognize incoming messages from the ESP. Those incoming messages direct the switch to activate a message waiting indication on an ESP's client's line.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator - Activation (Audible)	AM - Remote Activation of Message Waiting	BSE
	BA - Messaging Services Interface	BSE
	BS - SMDI	BSE
	NX - SMDI	BSE
	PB - Activate Message Waiting Indicator	BSE
	PB - Forwarded Call Information - Multiple Users	BSE
	SWB -Simplified Message Desk Interface	BSE
	USW - Message Delivery Service	BSE

FEATURE OPERATION:

1. 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.

2. 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 dial each time a call is attempted until the ESP sends a message to the switch to remove the stutter dialtone (MWI).

3. Messages to turn on/turn off the Message Waiting Indicator (MWI) are sent to the central office on an SMDI-type data link.

4. If the client DN does not have the MWI option assigned, is not a valid DN, or if the switch does not have enough resources to carry out the message waiting function, a message is sent to the ESP via the Input/Output channel.

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 Performance Requirements, FSD 05-02-0150 (A Module of LSSGR, FR-64), Issue 2, May 1991, Supplement 1, December 1991.

This service, if offered as a BSE, may be associated with the Dedicated Network Access Link or Circuit Switched Line basic serving arrangement, as stated in each individual ONA plan.

Message Waiting Indicator Activation (Audible) - Expanded (1100)

When an end user subscribes to Voice Message/Reminder service the end user should have the ability to forward calls to the Enhanced Service Provider's voice messaging service, leave a detailed message for those who may be calling, and have a recorded voice message left in response. When messages are left for the end user, a message waiting indicator should be provided indicating a message is waiting. The ability to remotely activate message waiting indicator to end user's lines not located in the same central office, but in the same Local Access Transport Area (LATA) as the ESP (Voice Message Provider), is made possible through the Common Channel Signaling System 7 (SS7) network.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator Activation (Audible) - Expanded	AM - Remote Activation of Message Waiting - Expanded	BSE
	BA - Premier Messaging Services Interface	BSE
	USW - Message Delivery Service Interoffice	BSE

FEATURE OPERATION:

The subscriber to the ESP's service has calls forwarded to the ESP's 7 or 10 digit telephone number. The end user can use Call Forwarding Busy Line, Call Forwarding Don't Answer, Call Forwarding Variable, or direct call to reach the ESP's voice message service. The ESP can activate a message waiting indicator for end users not served by the same central office switch as the ESP as long as the called subscriber (end user) and the ESP's central office are connected via the SS7 network and are equipped with the appropriate software packages.

Messages from the Voice Message Provider:

Two message types may be sent by the voice message provider to the serving central office via a Dedicated Network Access Link (See: Message Desk (SMDI) - Expanded). The first message activates the Message Waiting Indicator (MWI) feature on a specified directory number, the second message deactivates the indicator. The ESP's serving central office does not acknowledge receipt of these messages unless it encounters a problem when attempting to execute the request.

There are two types of failure messages, invalid and blocked. The invalid message results from an attempt to activate or deactivate MWI on a directory number not assigned the MWI option. The failure message can also be generated when a directory number is transmitted with incomplete or inaccurate information. The blocked message indicates that the central office was momentarily unable to execute the message request.

The ESP's serving central office does not expect an acknowledgment signal indicating the activation/deactivation of MWI for 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	1AE11.03*	5E7*	BCS30*

* ESP and end user's serving central offices must be interconnected with SS7.

2. The ESP's customer premises equipment (CPE) used to receive and interpret the SMDI data must use the same signaling and data communications protocol as the telephone office Input/Output channel. This channel uses a standard Electronic Industries Association (EIA) RS232 asynchronous 1200 or 9600 baud ASCII interface.

3. Interconnection to the CPE is via standard outside plant cable, tip and ring connections.

4. Interface Description - Interface Between Customer Premises Equipment, Simplified Message Desk and Switching System: 1A ESS, Issue 1, July 1985.

5. References:

   - Ameritech Message Signal Interface (AMSI) and Ameritech Message Signal Interface - Expansion AM-TR-OAT-000065, Issue 1, July 1990.

   - Technical Reference for Call Forwarding Busy Line and Call Forwarding Don't Answer can be found in TR-TSY-000586, Call Forwarding Subfeatures, FSD 01-02-1450, Issue 1, July 1989.

This service, if offered as a BSE, is associated with the Dedicated Network Access Link serving arrangement.

Message Waiting Indicator - Activation (Visual) (1076)

This capability allows an ESP to indicate to its client that a message is waiting for retrieval. With this capability, the ESP can activate a visual alerting signal (usually a lamp) on the ESP's client's line.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator - Activation (Visual)	AM - Remote Activation of Message Waiting	BSE
	BA - Messaging Services Interface	BSE
	BS - SMDI	BSE
	PB - Electronic Business Set Message Waiting	BSE
	USW - Message Delivery Service	BSE

FEATURE OPERATION:

MWI - Activation (Visual) is a central office software and hardware capability that allows an ESP with CPE, to activate a visual lamp or LCD on their subscriber's line when messages are being held (see MWI - Ability to Receive Visual Message Waiting). The subscriber's line, also with special CPE and central office software/hardware, would flash at 60 IPM when activated. After a subscriber picked up their messages, the ESP would have the ability to deactivate the client's visual message waiting indicator.

Message Waiting Indication, visual or otherwise, is controlled by a software package in the central office switch, usually Simplified Message Desk Interface (SMDI) or Message Desk Service. The software package will activate or deactivate a client's message waiting indication based on signals passed over an interface from the Message Desk Provider to the central office interface.

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 ESP's client is off-hook or there are no messages queued and the client is on-hook.

3. This feature can only be offered on an intraoffice basis.

4. References: U S WEST reference publication 77335 - "U S WEST Message Waiting Indication - Visual," September 1990.

This service, if offered as a BSE, is associated with the Dedicated Network Access Link basic serving arrangement.

Message Waiting Indicator Activation (Visual) - Expanded (1101)

When an end user subscribes to Voice Message/Reminder service the end user should have the ability to forward calls to the Enhanced Service Provider's voice messaging service, leave a detailed message for those who may be calling, and have a recorded voice message left in response. When messages are left for the end user, a message waiting indicator should be provided indicating a message is waiting. The ability to remotely activate message waiting indicator to end user's lines not located in the same central office, but in the same Local Access Transport Area (LATA) as the ESP (Voice Message Provider), is made possible through the Common Channel Signaling System 7 (SS7) network.

Generic Name of ONA Service	Product Name	BSE or CNS
Message Waiting Indicator Activation (Visual) - Expanded	AM - Remote Activation of Message Waiting - Expanded	BSE
	BA - Premier Messaging Services Interface	BSE
	USW - Message Delivery Service - Interoffice	BSE

FEATURE OPERATION:

The subscriber to the ESP's service has calls forwarded to the ESP's 7 or 10 digit telephone number. The end user can use Call Forwarding Busy Line, Call Forwarding Don't Answer, Call Forwarding Variable, or direct call to reach the ESP's voice message service. The ESP can activate a message waiting indicator for end users not served by the same central office switch as the ESP as long as the called subscriber (end user) and the ESP's central office are connected via the SS7 network and are equipped with the appropriate software packages.

Messages from the Voice Message Provider:

Two message types may be sent by the voice message provider to the serving central office via a Dedicated Network Access Link (See: Message Desk (SMDI) - Expanded). The first message activates the Message Waiting Indicator (MWI) feature on a specified directory number, the second message deactivates the indicator. The ESP's serving central office does not acknowledge receipt of these messages unless it encounters a problem when attempting to execute the request.

There are two types of failure messages, invalid and blocked. The invalid message results from an attempt to activate or deactivate MWI on a directory number not assigned the MWI option. The failure message can also be generated when a directory number is transmitted with incomplete or inaccurate information. The blocked message indicates that the central office was momentarily unable to execute the message request.

The ESP's serving central office does not expect an acknowledgment signal indicating the activation/deactivation of MWI for 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	1AE11.03*	5E7*	BCS30*

* ESP and end user's serving central offices must be interconnected with SS7.