

Automatic Protection Switching (1028)

Automatic Protection Switching provides the ability to monitor a non-switched facility between the ESP premises and the wire center serving the premises and to automatically switch to a spare facility if the performance of the original facility degrades or fails. It requires compatible equipment at both the ESP premises and the serving wire center.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Automatic Protection Switching	Automatic Protection Switching	BSE
	Automatic Loop Transfer	RSE

FEATURE OPERATION:

Automatic Protection Switching (APS) can be offered in two configurations. It can be offered as a stand alone APS for use with T1 carrier or as DS1 APS incorporated into a DS3/1 multiplexer unit.

The stand alone unit, in conjunction with an identical unit at the opposite end of the T1 carrier facility to be protected, switches from the primary T1 carrier facility to a standby facility upon detection of a loss of the 1.544 Mbps signal or of an unacceptable Bit Error rate. There are two T1/1.544 Mbps inputs from the line side of the unit, a primary input and the standby input. The inputs normally terminate on a cross connect device and are connected to the DS1 Access Link carrier facilities between the Serving Wire Center and the Customer Premises.

There is one 1.544 Mbps output port on the APS unit. In the central office it will be terminated on a digital cross connect frame for interconnection with other DS1 facility terminations or switch appearances. On a customer premises, it will be terminated on a standard Network Interface.

The DS1 APS method is accomplished by means of circuitry contained within the DS3/1 multiplexer. The low speed DS1 cards can have an optional APS capability on a DS3 basis. Some levels of protection are 1 for 4 and 1 for 7, depending upon the manufacturer of the multiplexer unit. This equipment is part of a DS3 or higher level transmission system and cannot be applied to metallic-based T1 carrier. The facility side DS1 is internal to the multiplexer. The DS1 output of the multiplexer is terminated on a DS1 cross connect frame in the Serving Wire Center.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This capability must be deployed on a circuit by circuit basis when offered in a standalone configuration.
2. There is no feature interaction.
3. References:
 - GR-474 OTGR Section 4: Network Maintenance: Alarm and Control for Network Elements (A Module of OTGR, FR-439), Issue 1, December 1997 (replaces TR-NWT-000474, Issue 4)

- GR-833 TLI Surveillance and Maintenance Messages, Issue 6 - December 2005 (replaces TR-NWT-000833, Issue 5)
- Specification of System Maintenance Messages at the OS/NE Interface, TA-NWT-000200, Issue 5, December 1990 [No longer listed.]
- TA-TSY-000435 DS1 Automatic Facility Protection Switching (AFPS) Feature For Digital Terminal System Requirements and Objectives, Issue 1, February 1987
- TR-TSY-000238 Digital Channel Bank Dual-Tone Multifrequency (DTMF) Code Select Signaling Channel Unit, Issue 1, December 1986 [No longer listed.]
- SR-NWT-001736 Automatic Protection Switching for SONET, Issue 1, October 1990

This service, if offered as a BSE, may be associated with the Dedicated Digital (< 64 kbps), Dedicated High Capacity Digital (1.544 Mbps) and Dedicated High Capacity Digital (> 1.544 Mbps) basic serving arrangements.

Bridging (1029)

Bridging allows the connection of three or more customer designated premises through a telephone company hub or bridge. The following are different types of bridging:

- Central Office Bridging provides the ability to connect multiple customer-designated premises with 2 or 4 wire voice grade circuits.
- Series Bridging provides a tip-to-tip and ring-to-ring series completion of a metallic pair to up to 26 customer-designated premises in a central office.
- Telegraph Bridging provides the ability to connect multiple customer designated premises with 2 or 4 wire telegraph circuits.
- Three Premises Bridging provides a tip-to-tip and ring-to-ring connection in a central office of a metallic pair to a third customer designated premises.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Bridging	Bridging	BSE
	Multi-point	BSE

FEATURE OPERATION:

See above description.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of central office switch type.
2. Note that some LECs may not offer this feature in conjunction with the Category 3, Type K - Dedicated Digital (64 Kbps) BSA.
3. References:
 - See Definition only, Bridge Lifters, SR-504 SPCS Capabilities and Features (A Module of LSSGR, FR-64), Issue 1, March 1996 (replaces TR-NWT-000504, Issue 2)
 - GR 672 LSSGR: Bridge Services On An IDLC System, FSD 20-02-2010 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000672, Issue 1 – no technical changes)

This service, if offered as a BSE, may be associated with the Dedicated Metallic, Dedicated Telegraph, Dedicated Voice Grade, Dedicated Program Audio and Dedicated Digital (< 64 kbps) basic serving arrangements.

Conditioning (1030)

Conditioning provides assured transmission quality on analog private lines for technical parameters such as frequency response, envelope delay distortion, signal to C-notched noise ratio and nonlinear distortion.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Conditioning	Conditioning	BSE

FEATURE OPERATION:

See above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of central office switch type.
2. References:
 - Data Communication Using Voiceband Private Line Channels (MDP326-584), Issue 1, October 1973 [no longer listed].
 - High Performance Data Conditioning - Type D5 for Multipoint Private Line Data Channels (MDP326-461), Issue 1, September 1982 [no longer listed].

This service, if offered as a BSE, is associated with the Dedicated Voice Grade basic serving arrangement.

Data Over Voice (DOV) Service (1031)

Data Over Voice (DOV) service provides a point-to-point derived data channel over the same pair of wires used to provide local service. DOV can be used to connect a client to an ESP or between two ESP locations.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Data Over Voice (DOV) Service	DOV Connect	BSE

FEATURE OPERATION:

DOV is established via a service order placed with the telephone company. Each line to be provisioned for DOV will be equipped with a Voice Data Multiplexer (VDM) at the end user's location (CPE) and in the serving central office. The VDM at the serving central office directs voice traffic to the circuit switched network and the data traffic to another VDM, special access line, or to a data switch. Back-to-back VDMs will allow the ESP to connect to a client or another ESP location.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. This feature is independent of central office switch type.
2. The derived data channel may support speeds up to 19.2 Kbps.
3. Interoffice back-to-back VDM arrangements may be offered by some LECs.
4. The pair of wires between the end user's location and the central office must be nonloaded.
5. This service is not compatible with range extension or subscriber carrier equipment.
6. References:
 - SR-NPL-000665 Network Interface Specification: DOV/DVM Type 1, Issue 1, January 1987. (No longer listed.)

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	VERIZON Product Name	BSE or CNS
Derived Channels (Monitoring)	Alarm Transport Service	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).
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.

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	VERIZON Product Name	BSE or CNS
Route Diversity	Diversity Routing	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.

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	VERIZON Product Name	BSE or CNS
Secondary Channel Capability	Digital Data Service 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. [No longer listed.]

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

4. Technical Descriptions for Dedicated Network Access Link Serving Arrangements

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 QNA Service	VERIZON Product Name	BSE or CNS
Message Desk (SMDI)	Simplified Message Desk Interface (SMDI)	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	Earliest Generic Release
EWSD	9
GTD-5	1.6.5.3
DMS-10	404.3
1A ESS	1AEB8A
5ESS	5E4.2*
DMS-100	BCS29**

Note: * In the 5ESS, this feature requires the nonstandard 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:
 - GR-283 LSSGR: Simplified Message Desk Interface (SMDI) (A Module of LSSGR, FR-64), Issue 3, February 2002 (replaces TR-NWT-000283 Issue 2 & Supplement 1, & GR-283 Issue 2).

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) (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 DNA Service	VERIZON Product Name	BSE or CNS
Message Waiting Indicator- Activation (Audible)	Message Waiting Indication - Audible	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	Earliest Generic Release
EWSD	9
GTD-5	1.6.4.1
DMS-10	404.3
1A ESS	1A E8A
SESS	5E4.2*
DMS-100	BCS29**

Note: * In the SESS, this feature requires the non-standard pre-ISDN arrangement using the ISDN 1 Message AB/ACP or TA 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:

- GR-283 LSSGR: Simplified Message Desk Interface (SMDI) (A Module of LSSGR, FR-64), Issue 3, February 2002 (replaces TR-NWT-000283 Issue 2 & Supplement 1 & GR-283 Issue 2).

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.

1. Appendix 1 - Region Specific Services - Technical Descriptions for Circuit Switched Serving Arrangements

Anonymous Call Block (9011)

The Anonymous Call Rejection (ACR) capability provides the ESP's client with the ability to reject calls from parties that have activated the Cancel Calling Number Delivery feature to prevent the display of their telephone numbers. When ACR is activated, such calls will be routed to an announcement which tells the calling party that the called party will not accept calls from callers who have chosen to prevent the display of their telephone numbers. The calling party will be instructed to hang up and place the call again, without activating the Cancel Calling Number Delivery feature.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Anonymous Call Block	Anonymous Call Block	CNS

FEATURE OPERATION:

To activate or deactivate anonymous call rejection, the ESP's client dials a preassigned activation code in the form of *XX.

1. Dialing an activation code. A dial tone is provided, and then the ESP's client inputs the activation code in the form *XX (or 11XX on a rotary dial telephone). A recording or confirmation tone will notify the ESP's client that Anonymous Call Rejection is ON.
2. Dialing the deactivation code. A dial tone is provided, then the ESP's client inputs the Anonymous Call Rejection deactivation code in the form of *XX (or 11XX on a rotary dial telephone). A recording or confirmation tone will notify the ESP's client that Anonymous Call Rejection is OFF.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	17.2
EWSD	9
GTD-5	1.7.2.2
DMS-10	406.1
1A ESS	1AE9
5ESS	5E9.1
DMS-100	BCS32

Third Number Billing Inhibited (9012)

This capability provides Enhanced Service Providers (ESPs) with the ability to prevent third number calls from being billed to their switched access billing accounts (e.g., DID numbers). This capability is provided by the operating procedures of a LEC providing operator services capabilities.

When a call is made to a LEC operator services system, and the caller requests the charges be billed to a third number, the operator makes a call to the third number for verification that the charges will be accepted. If no answer is received when the third number is called for verification of billing acceptance, the bill to third request is rejected.

In some areas, when a call is made to a LEC operator services system, and the caller requests the charges be billed to a third number, the operator queries the Line Information Database (LIDB) to determine the billed party's preference concerning bill to third number requests. If the information in the LIDB indicates to always reject bill to third party attempts, then the bill to third party request is rejected.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Third Number Billing Inhibited	Billed Number Screening	BSE

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	14.1
EWSD	9
GTD-5	1.6.2.1
VIDAR	7.0.1.2
ITT-1210	7.2
DMS-10	208.1
1A ESS	1AE9
5ESS	5E4
DMS-100	BCS30
#2EAX	1.2.9.1

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

Busy Redial (9001)

This capability provides the ESP's client with the ability to dial a redial activation code when a busy line is reached. The number is then reried automatically until both parties are available.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Busy Redial	Busy Redial	CNS
	Automatic Busy Redial	CNS
	Busy Number Redial	CNS

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	17.2
EWSD	9
GTD-5	1.6.2.1
DMS-10	404.4
1A ESS	1AE9
5ESS	5E5
DMS-100	BCS30

2. Only busy calls within the central office are reried automatically.

Call Forwarding Busy No Answer - Fixed (9008)

This feature is a permanently activated service which automatically redirects calls placed to an ESP's client's telephone number to another telephone number subscribed to by the LEC's customer, if the caller encounters either a no-answer condition after a specified number of rings or a normal busy-line condition.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Call Forward Busy-Line/No Answer - Fixed	Call Forward Busy-Line/No Answer - Fixed	CNS
	Call Forward BL/DA	CNS
	Call Forward No Answer - Fixed	BSE

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	15.1
EWSD	9
GTD-5	1.6.2.1
DMS-10	305.2
1A ESS	1AE9
5ESS	5E5
DMS-100	BCS30
#2EAX	1.2.9.1

2. When Call Forwarding Busy-Line/No Answer - Fixed is active, the ESP's client's ability to originate calls will be unaffected.

Call Forwarding – Fixed (9007)

This feature provides the ESP's client with the ability to redirect all incoming calls to another location on a different premises. This service is permanently activated and the customer's preselected forwarding number is pre-programmed in the network via service order.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Call Forwarding - Fixed	Call Forwarding - Fixed	CNS
	Call Forwarding Busy-Fixed	CNS

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCC	14.1
EWSD	9
GTD-5	1.6.2.1
VIOAR	7.0.1.2
ITT-1210	7.2
DMS-10	305.2
1A ESS	1AE9
5ESS	5E5
OMS-100	BCS30
#2EAX	1.2.9.1

Call Restriction Service (9017)

This capability provides the ESP's client with the ability to restrict one plus (1+ and 10+xxx), International (011+), zero plus (0+) and/or zero minus (0-), and 900 prefix calling. Restricted calls are directed to a central office announcement.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Call Restriction Service	Call Restriction Service	CNS
	Voluntary Toll Restriction Service	CNS
	Call Restriction Service Toll Restriction	CNS

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	15.1
EWSD	9
GTD-5	1.6.2.1
VIDAR	7.0.1.2
DMS-10	402.52
1A ESS	1AE9
5ESS	5E4
DMS-100	BCS30
#2EAX	1.2.9.1

2. Toll Restriction will not be provided on party lines or CentraNet® lines.

Call Waiting (9004)

The Call Waiting (CW) feature informs a busy station user, by a burst of tone, that another call is waiting. The busy station user may hang up and answer the second call or can place the original call on hold and answer the second call.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Call Waiting	Call Waiting	CNS
	Call Waiting/Cancel Call Waiting	CNS

FEATURE OPERATION:

An incoming call to a busy line with CW receives audible ringing. The line with Call Waiting receives a CW tone that is repeated once about 10 seconds after the initial burst of tone.

The line with CW may respond to the CW tone in one of three ways. The called party may disconnect from the existing call. The telephone will then be rung and, if answered, the called party will be connected to the waiting call. The second alternative allows the line with Call Waiting to flash the switch-hook (.75 to 1.5 seconds) and, thereby, place the original call on hold and connect to the incoming call. The party with CW may alternate between calls by flashing the switch-hook. The third alternative is not to respond to the CW tone.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	14.1
EWSD	9
GTD-5	1.6.2.1
VIDAR	7.0.1.2
ITT-1210	7.2
DMS-10	210.4
1A ESS	1AE8
5ESS	5E2
DMS-100	BCS17
#2EAX	1.2.9.1

2. If a line has Call Forwarding Busy Line (CFBL) and CW, the CW service normally takes precedence.

3. Given that a line has both CFBL and CW and is in the talk state, the first call attempting to terminate is treated as a CW call. Subsequent termination attempts are call forwarded.
4. On a line with both a make-busy key and CW, make-busy key takes precedence when the key is activated.
5. References:
 - GR-571 LSSGR: Call Waiting FSD 01-02-1201 (A Module of LSSGR, FR-64), Issue 1, June 2000, (replaces TR-TSY-000571 Issue 1 & Revision 1 – no technical changes).
 - GR-573 LSSGR: Business Group Call Waiting FSD 01-02-1205 (A Module of LSSGR, FR-64), Issue 1, June 2000 (replaces TR-TSY-000573 Issue 1 – no technical changes).
 - GR-219 LSSGR: CLASSSM Feature: Distinctive Ringing/Call Waiting, FSD 01-01-1110 (A Module of LSSGR, FR-64), Issue 2, April 2002 (replaces TR-TSY-000219 Issue 2 & Revision 1 & Bulletin 2 & GR-219 Issue 1).

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Customer Controllable Ringing (9023)

This capability provides the ESP's client with the ability to adjust the number of ring cycles that are used prior to forwarding a call in a "No Answer" situation.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Customer Controllable Ringing	Customer Controllable Ringing	CNS

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	17
EWSD	9
GTD-5	1.6.2.3
DMS-10	404.3
1A ESS	1AE9
5ESS	5E4

2. To select the number of rings desired (1-9), the customer will dial a special access code and then input a digit that corresponds to the number of ring cycles desired before the forwarding takes place.

GTE Dial DataLink® Service (9021)

This capability provides the ESP's client with an enhancement to their local facilities to provide higher quality transmission standards than normally provided for voice transmission. It is designed for customers requesting a better grade of service for data transmission.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Dial Data Link	GTE Dial DataLink® Service	CNS
	GTE DataLink	BSE

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. The quality of the line is guaranteed only between the customer point of demarcation and the serving central office switch. No guarantee is made for a transmission level over the entire circuit.
2. GTE Dial DataLink® Service is not offered in conjunction with the following:
 - Foreign Central Office Service
 - Foreign Exchange Service
 - CentraNet® Service
 - Call Waiting
 - Off-Premise Extensions
 - PBX Trunks or stations
 - Residence or Business service provided by analog station carrier (e.g., 82A & 84A)
 - Smart RingSM

SM Smart Ring is a service mark of VERIZON Telephone Operations. GTE Dial DataLink and CentraNet are registered trademarks of VERIZON Telephone Operations.

Last Number Redial (9003)

This capability provides the ESP's client with the ability to dial an activation code and automatically place a call to the last called number. Each time the ESP's client dials, using the activation code, the most recent number is stored.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
Last Number Redial	Last Number Redial	CNS

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

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

Switch Type	Earliest Generic Release
DCO	17.2
EWSD	9
GTD-5	1.6.2.1
DMS-10	404.2
1A ESS	1AE9
5ESS	5E5
DMS-100	BCS30

2. When last number redial is active, the ESP's client's ability to receive calls will be unaffected.

MegaConnect Service (9020)

This capability provides the Enhanced Service Provider (ESP) with a high speed data service that offers broadband switching over a wide geographic area. MegaConnectSM can be provided with either a lineside or trunkside interface.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
MegaConnect Service	MegaConnect Service	BSE

FEATURE OPERATION:

See description above.

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS:

1. Customer premises are connected to the MegaConnect port via DS1 or DS3 Special Access Lines
2. One MegaConnect address is assigned to each DS1 or DS3 service accessing the MegaConnect network.
3. A maximum of sixteen addresses can be assigned to each DS1 or DS3
4. The MegaConnect Network will only transmit information between authorized users within a customer-defined closed user group. A closed user group is a set of source and destination addresses allowed to exchange data traffic in the MegaConnect network.
5. References:
 - TR-TSV-000772, Issue 1, May 1991 [No longer listed.]
 - TR-TSV-000773, Issue 1, January 1993
 - TR-TSV-001060, Issue 2, March 1995 [No longer listed.]
 - TR-TSV-001062, Issue 1, March 1993 [No longer listed.]
 - TR-TSV-001064, Issue 1, December 1992, Revision 1, December 1993 [No longer listed.]

SM MegaConnect is a service mark of VERIZON Telephone Operations.

Message Waiting Indication – Ability To Receive Audible Ring Burst (9019)

This capability provides the ESP's client with the ability to receive ringing at a special cadence to signal the customer that a message is waiting. This reminder will be repeated at a specific interval programmed by the Telephone Company.

Generic Name of ONA Service	VERIZON Product Name	BSE or CNS
MWI – Ability To Receive Audible Ring Burst	MWI – Ability To Receive Audible Ring Burst	CNS

TECHNOLOGICAL AND FEATURE INTERACTION CONSIDERATIONS

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

Switch Type	Earliest Generic Release
GTD-5	1.7.1.1

2. The Audible Ring Burst feature is in addition to the stoner dial tone that normally represents a message waiting.