297-2251-011

DMS-100 Family

TOPS IWS

Operator Assistance Application Guide

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DMS-100 Family

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Operator Assistance Application Guide

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1.0 Introduction

This document describes the IWS Operator Assistance (OA) application, which provides toll and assistance capabilities for the operator. It describes the human machine interface (HMI) and its call-related and system functionality. This document also describes how to install the IWS Operator Assistance application.

The IWS features described are functionally dependent upon the software in the DMS switch.

Operator Assistance provides information to the operator through the Call Information Window and the Call Details Window. In turn, the operator uses the keyboard to enter information.

In the following sections, string IDs identify the text strings displayed as field labels and informational messages in each window. Each text string is uniquely identified by a string ID. The string IDs are numbered sequentially from 0, identifying each data file containing the strings. The text strings for each window may be changed in its associated language file. String lengths (especially where variable width pitched fonts are used) are determined by basing on average “X” width character sizes.

2.0 Operator Assistance in TOPS IWS

Operator Assistance is one component of the open TOPS IWS system. This document refers to the TOPS IWS operator workstations and all associated hardware and software components. Figure 1, “TOPS IWS Operator Assistance Network Topology,” on page 14, provides an overview of the TOPS IWS network topology. Figure 2, “Network Layer Orientation in TOPS IWS,” on page 15, shows the relationship between applications and the network layer, and Figure 3, “TOPS IWS Software Architecture,” on page 16, provides an overview of the TOPS IWS software architecture.

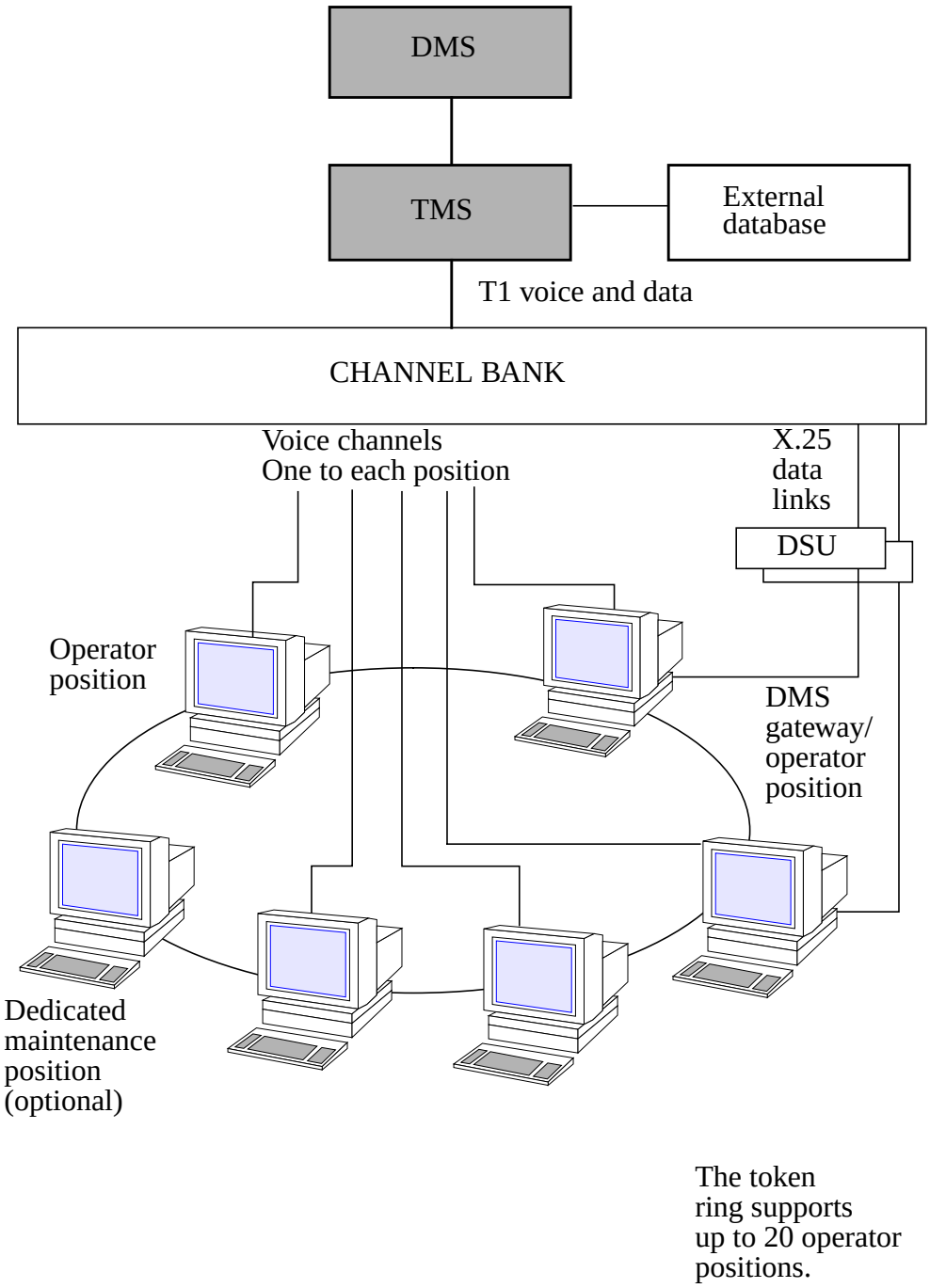

FIGURE 1. TOPS IWS Operator Assistance Network Topology

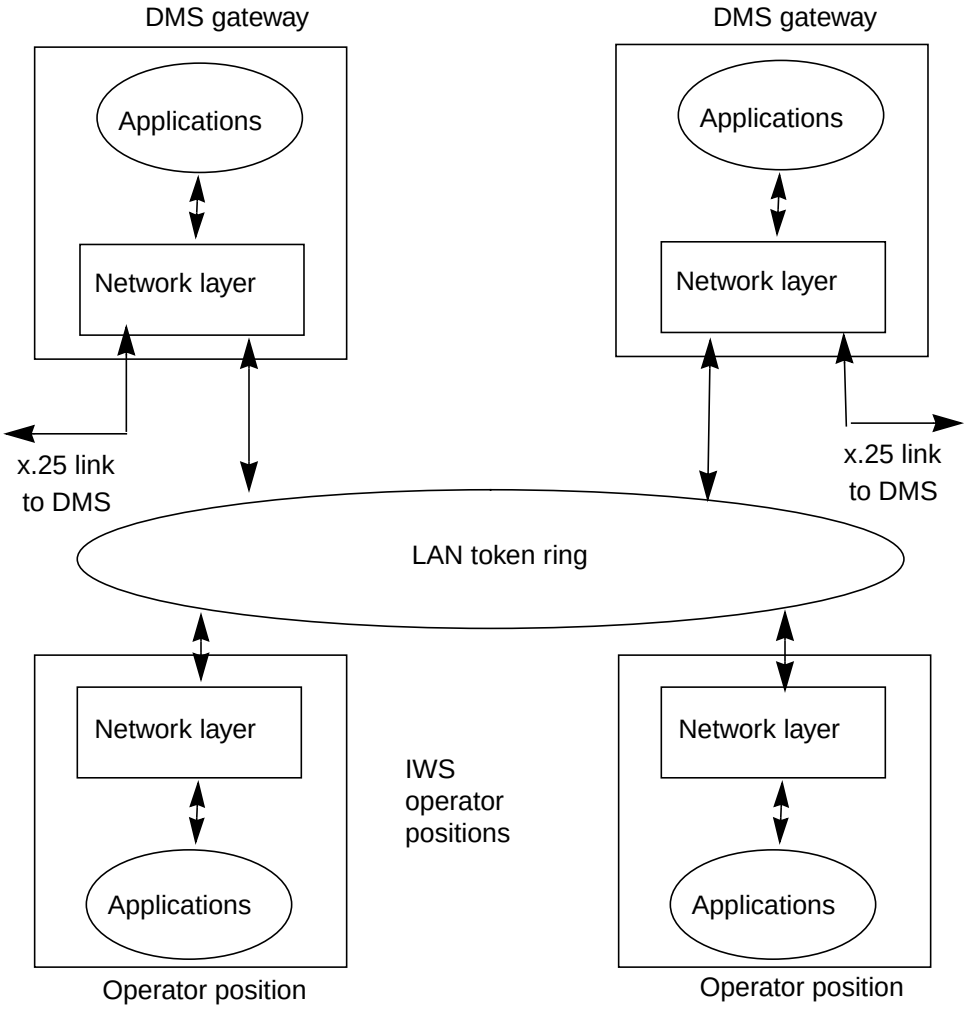

FIGURE 2. Network Layer Orientation in TOPS IWS

As indicated in Figure 3, Operator Assistance interfaces with the TOPS IWS system through an Application Programmer's Interface called the IWS API. Refer to *TOPS IWS Base Platform User's Guide, 297-2251-010, (formerly Base Application Guide)* for the IWS API definition.

Through the API, the Operator Assistance application receives the information to display on the screen for the operator. This information originates in the DMS switch and is passed to the OA application from the IWS base software through the IWS API. The OA application also communicates operator input through the IWS API to the TOPS IWS system and, ultimately, to the DMS switch. The OA application does not function without the base software identified in Figure 3, "TOPS IWS Software Architecture," on page 16.

For a complete discussion of the IWS base software, refer to *TOPS IWS Base Platform User's Guide, 297-2251-010, (formerly Base Application Guide)*.

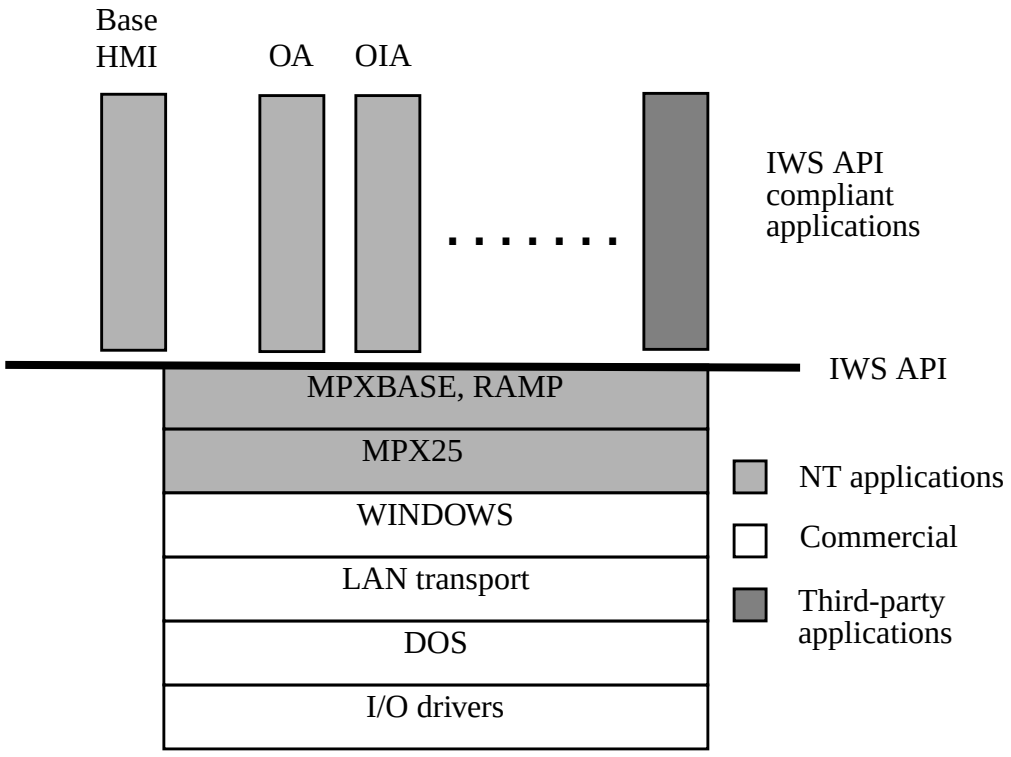

FIGURE 3. TOPS IWS Software Architecture

2.1 Operator Assistance Used as Billing Application

The Operator Assistance application may be used as a billing application for other IWS applications that provide DMS switch services. To select the OA application as the billing application, the Billing Application Tag field in the Table XSERVS must contain the application tag for the OA application. Refer to *TOPS IWS Base HMI Application Guide* for more information on Table XSERVS.

In this regard, OA provides a context change key between the OA application and the position's current service application for which the OA application is providing billing functionality. While the operator is handling another service call type (a DMS switch service other than toll and assistance), the operator can perform billing actions by changing the position context from the application service screen to the OA application screen. This is done through defined context change keys provided by the service application. The OA application also provides a defined softkey set for all DMS switch call types defined in the TOPS IWS RAMP and Provisioning User's Guide. If the OA application screen is displayed while the operator is handling another service call type (for example, a directory assistance call), the OA application displays the defined softkey set for handling billing for the present call. The defined OA softkey set and the ability to define context change keys are discussed in "Call Information Window Softkeys" on page 39 and in the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for the Table XKBOARD, respectively.

3.0 Call Information Window

The Call Information Window is where the operator enters directory numbers, calling card numbers, hotel room numbers, and many other types of call-related information to be sent to the DMS switch. The Call Information Window fields are discussed in detail in the following sections. Figure 4, “Call Information Window,” on page 17, shows the Call Information Window.

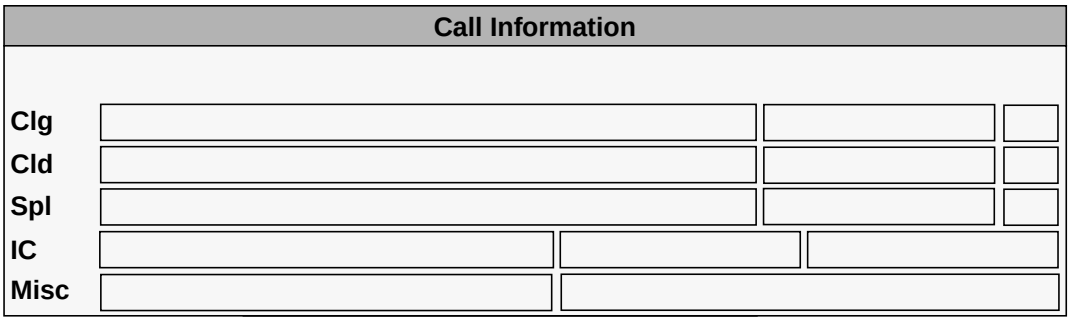

FIGURE 4. Call Information Window

Figure 5, “Call Information Window in Operator Information Window,” on page 18, shows the Call Information Window in its position in the Operator Information Window. Note that the Call Details Window is also displayed when the Call Information Window is displayed. Refer to “Call Details Window” on page 45 for more information.

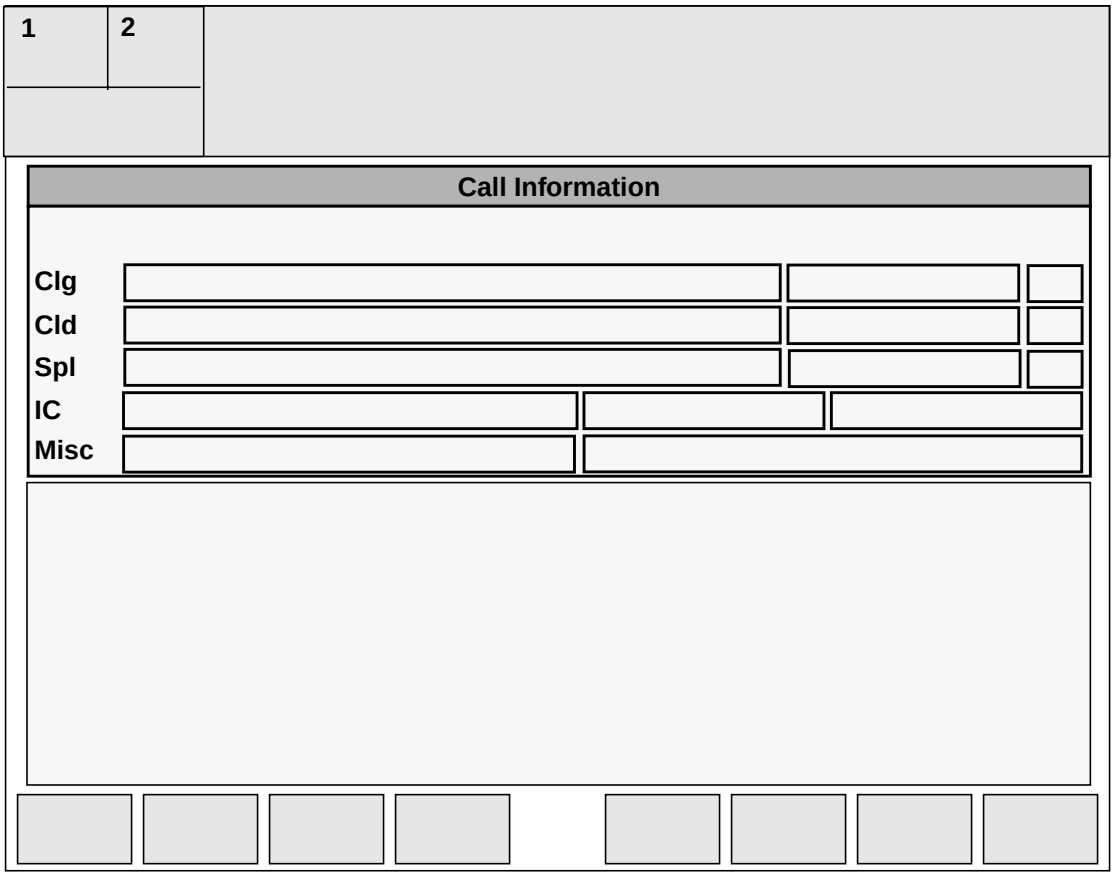

FIGURE 5. Call Information Window in Operator Information Window

3.1 Call Information Window Fields

The Call Information Window is made up of several fields. Figure 6, “Call Information Window Fields,” on page 19, shows the Call Information Window’s fields numbered for reference to the subsequent discussion of each field.

Unless otherwise noted, all text in this window is displayed in MS San Serif 10 point bold variable pitched font. Text strings for the fields described in this section appear in the language file OACINFO.LNG.

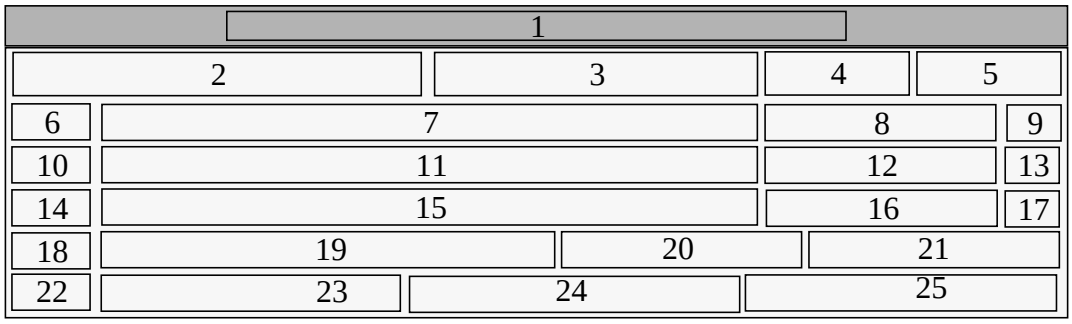

FIGURE 6. Call Information Window Fields

3.1.1 Call Information Window Title Field 1

This field contains the title for the Call Information Window. This field may contain a maximum of 40 characters. Text in this field is centered and displayed in MS Windows System Font. The following text string is displayed in this field:

Call Information **String ID 0000**

3.1.2 Service/Type Field 2

The Service/Type field is where call arrival information is placed for the operator. The text displayed in the Service/Type field is supplied through TOPS IWS position datafill. The information displayed in this field includes the service type and other call origination information, including the call type, call arrival status, or reason for operator information, whichever is appropriate. In addition, notification of a dubious call origination status and notify minutes are displayed in this field. This field may contain up to 25 characters.

The service information text comes from TOPS IWS table XSERVS and may contain up to 6 characters in length. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for the description of table XSERVS. The call type information comes from TOPS IWS table XCLLORIG and may contain up to 10 characters. The call-arrival status text comes from table XCASTS and may contain up to 10 characters. Refer to the Data Schema Section of this document for a detailed description of tables XCLLORIG and XCASTS. The reason for operator information may contain a maximum of 8 characters. The following text strings are displayed, based on the reason for operator information:

Recall **String ID 0001**

Indicates a coin flash recall, in which a coin sent-paid call recalls to the operator when the calling subscriber flashes the hook.

Notify **String ID 0002**

Indicates that a nonstandard notify time has expired and it is time to notify the call. Notify Minutes, "dd", are also appended to this field when the notify time has expired on a call that has been put on hold and it is accessed for notification. If the

call cannot be accessed until the time runs over the notify time, a “+” is appended to the Notify Minutes.

Overtime **String ID 0003**

Indicates coin overtime notify, in which the operator collects the charges for the last period of conversation for a coin sent-paid call.

DA-Rcl **String ID 0004**

Indicates that a Directory Assistance call has recalled to the operator.

T&C **String ID 0005**

Indicates that a call requesting time and charge information during call setup has ended.

Hold **String ID 0043**

Indicates that a call placed on permanent hold has been accessed by the operator.

A “?” may be appended to the text in this field to indicate a dubious Call Origination Status.

3.1.3 Calling Station Class Information Field

This field contains information about the calling station class. Restricted billing text is also displayed in this field. The calling station class information may be up to 8 characters long. The following text strings are displayed for the calling station class information:

Coin Pre **String ID 0006**

Indicates a calling station class of prepay coin.

Coin Po **String ID 0007**

Indicates a calling station class of postpay coin.

Hotel **String ID 0008**

Indicates a calling station class of hotel.

Inst **String ID 0009**

Indicates a calling station class of institution.

<Restricted Billing>

The restricted billing text displayed in this field comes from either table XRBLG or XDARBLG and may contain up to 8 characters. If the call originated as a DA call, the string is taken from the XDARBLG table. If the call originated as a toll call, the string is taken from the XRBLG table. Refer to the *TOPS IWS Base Platform User’s Guide* (formerly *Application Guide*) for a detailed description of tables XRBLG and XDARBLG. This information is appended to the strings that define the station class of the call.

3.1.4 Call Type For Queueing (CT4Q) Field 4

The text displayed in the CT4Q Field is taken from table XCT4Q. Datafill, both in the DMS switch and in the TOPS IWS position, determines whether this field is displayed. Refer to the Data Schema section of this document for a detailed description of the XCT4Q table. This field may contain up to 9 characters.

3.1.5 Called Station Class Information Field 5

This field contains information concerning coin or hotel information associated with the call. This field may contain up to 9 characters. The following text strings are displayed in this field:

To: Coin **String ID 0010**

Indicates a called station class of coin.

To: Hotel **String ID 0011**

Indicates a called station class of hotel.

3.1.6 Calling Fields

3.1.6.1 Calling Field Label 6

This field contains the label identifying the Calling Field. This field may contain a maximum of 4 characters. The following text string is displayed in this field:

Clg **String ID 0012**

3.1.6.2 Calling Data Entry Field 7

This data entry field accepts and displays information about the calling party. The operator may enter up to 23 digits in this field.

In entering a directory number, the operator enters the digits without any formatting. If an error is made while entering the number, the ***** key (in the numeric keypad) or the Destructive Backspace key may be pressed to erase the character preceding the cursor. In a North American numbering plan (NPA) only, if the NPA was not entered before the digits, the operator may add it to the end by preceding it with the **#** key in the numeric keypad. When the **#** key is used to enter the NPA, the colon is displayed to separate the digits from the NPA, as shown in the following example:

5551212#800 is displayed as 5551212:800

For information on field editing, refer to “Data Entry” on page 32.

When the operator finishes entering the digits and presses the START key on the IWS keyboard, the digits are sent to the DMS switch. Once the DMS switch validates the digits, they are returned to the position and displayed formatted on the screen.

Up to 27 characters, including a maximum of 4 separators, may be displayed in this field when it is used for this purpose.

If the digits are invalid but are not received from the DMS switch, a “?” is displayed in a predefined error color.

If a directory number is required by the DMS switch but is missing, a “?” may be displayed in this field in the predefined alert color.

If automatic number identification (ANI) fails and the DMS switch can not identify the directory number at call arrival, the Calling Data Entry field displays the NPA and NXX. In some instances, the XXXX is included, with an “X” character indicating ANI failure. If no digits are available for display, the “X” character is displayed alone. This display appears in the normal text color.

If the DMS switch can not identify the directory number at call arrival, the Calling Data Entry field displays the NPA and NXX, with a “?” character indicating an operator number identification (ONI) call. If no digits are available for display, the “?” character is displayed alone. This display appears in the normal text color.

If Caller Id Blocking is enabled, “X”s replace the formatted digits in this field.

There are no datafillable text strings associated with this field.

3.1.6.3 Calling Information Field 8

This field is used to display additional information about the Calling Directory Number. Two types of information are displayed in this field:

Calling Text

This portion of the Calling Information field may display up to 4 characters. The following text strings are displayed in this field:

RES **String ID 0013**

Indicates that the calling number is prevented from making interLATA calls.

NEA **String ID 0014**

Identifies an incoming call as being from a non-equal access end office (Non-EAEO).

3.1.6.4 Calling Icon Field 9

This field may contain the following icons in the contexts specified:

Person Icon

Indicates that the call has been class charged as “Person Paid.”

Station Icon

Indicates that the call has been class charged as “Station Paid.” This icon is yellow.

Up Arrow Icon

Appears along with the X icon (in the Called Icon Field) and the down arrow icon (in the Special Icon Field) to indicate invalid information. It is also displayed in the Calling Icon Field with the question mark icon (in the Called Icon Field) and the down arrow icon (in the Special Icon Field) to indicate missing information.

3.1.7 Called Fields

3.1.7.1 Called Field Label 10

This field contains the label identifying the Called Field. This field may contain a maximum of 4 characters. The following text string is displayed in this field:

Cld **String ID 0015**

3.1.7.2 Called Data Entry Field 11

This data entry field is used to accept and display information about the called party. The operator may enter up to 23 digits into this field.

In entering a directory number, the operator enters the digits without any formatting. If an error is made while entering the number, the ***** key (in the numeric keypad) or the Destructive Backspace key may be pressed to erase the character preceding the cursor. In a North American numbering plan only, if the NPA was not entered before the digits, the operator may add the NPA to the end by preceding it with the **#** key in the numeric keypad. When the **#** key is used to enter the NPA, the colon is displayed to separate the digits from the NPA, as shown in the following example:

5551212#800 is displayed as 5551212:800

For information on Called Number field editing, refer to “Data Entry” on page 32.

When the operator finishes entering the digits and presses the START key on the TOPS IWS keyboard, the digits are sent to the DMS switch. Once the DMS validates the digits, they are returned to the position and displayed formatted on the screen.

Up to 27 characters, including a maximum of 4 separators, may be displayed in this field when it is used for this purpose.

If screening restrictions apply to the directory number, the digits are displayed in a predefined alert color.

A **String ID 0016**

The directory number may be displayed followed by the one-character string shown above, indicating that it has been outpulsed and that an alternate service number exists.

N **String ID 0017**

The directory number may be displayed followed by the one-character string shown above, indicating that it has not been outpulsed and that an alternate service number exists.

If the digits are invalid but are not received from the DMS switch, a “?” is displayed in a predefined error color.

If a directory number is required by the DMS switch but is missing, a “?” may be displayed in this field in the predefined alert color.

If a directory number database query failure occurs, a “?” may be displayed in this field in the predefined alert color.

3.1.7.3 Called Information Field 12

This field displays additional information about the called directory number. The text strings in this field are displayed in the same text color (normal, alert, or error) as the data displayed in the Called Data Entry Field, with which the Called Information Field is associated. This field may contain a maximum of 5 characters. The following text strings are displayed in this field:

IC **String ID 0018**

Indicates that the specified call is InterLATA.

When displayed with a question mark(?), identifies an invalid carrier number. The text string is displayed in error color.

Int’l **String ID 0019**

Indicates an attempt to place a call to an international number.

Loc **String ID 0020**

Identifies an attempt to place a call to a telephone within the local or free calling area of the calling telephone.

Vfy **String ID 0021**

Identifies a busy line verification attempt.

When displayed with a question mark (?), identifies an invalid verification attempt. The text string is displayed in error color.

Srv **String ID 0022**

Indicates that the called number is a service number.

VCA **String ID 0023**

Identifies an attempt to place a call to a vacant NPA or NXX code, or to a special collect number not known to the DMS switch.

When displayed with a question mark (?), identifies an invalid condition related to the called number identified as having a vacant code. The text string is displayed in error color.

UCA **String ID 0024**

Identifies an attempt to place a call to a special collect number for which the calling office is not authorized.

When displayed with a question mark (?), identifies an invalid condition related to the called number identified as having an unauthorized CAMA code. The text string is displayed in error color.

Req **String ID 0025**

Indicates the requested number.

MAN **String ID 0026**

Indicates that manual intervention is required by the operator to complete a service call.

Res **String ID 0027**

Indicates that screening restrictions apply on third number or collect billing.

Acc **String ID 0044**

Indicates to the operator that a LIDB query for the collect number has been accepted.

3.1.7.4 Called Icon Field 13

This field may contain the following icons in the contexts specified:

Person Icon

Indicates that the call has been class charged as ‘Person Collect’.

Station Icon

Indicates that the call has been class charged as ‘Station Collect’. This icon is yellow.

X Icon

X

Appears with the up arrow icon (in the Calling Icon Field) and the down arrow icon (in the Special Icon Field) to indicate invalid billing information.

Question Mark Icon

?

Appears with the up arrow icon (in the Calling Icon Field) and the down arrow icon (in the Special Icon Field) to indicate missing billing information.

Autocollect Icon

Indicates that the called party automatically accepts the billing, as in 800 services. This icon is cyan-colored.

3.1.8 Special Fields

3.1.8.1 Special Field Label 14

This field contains the label identifying the Special Field. This field may contain a maximum of 4 characters. The following text string is displayed in this field:

Spl **String ID 0028**

3.1.8.2 Special Data Entry Field 15

This data entry field accepts and displays information about a credit card number or a directory number for third-party billing. The operator may enter up to 23 alphanumeric characters in this field.

In entering a directory or credit card number, the operator enters the digits without any formatting. If an error is made while entering the number, the ***** key (in the numeric keypad) or the Destructive Backspace key may be pressed to erase the character preceding the cursor. In a North American numbering plan only, if the NPA was not entered before the digits, the operator may add it to the end in a directory number, by preceding it with the **#** key in the numeric keypad. When the **#** key is used to enter the NPA, the colon is displayed to separate the digits from the NPA, as shown in the following example:

5551212#800 is displayed as 5551212:800

For information on Special Number field editing, refer to “Data Entry” on page 32.

When the operator finishes entering the digits and presses the START key on the TOPS IWS keyboard, the digits are sent to the DMS switch. Once the DMS validates the digits, they are returned to the position and displayed formatted on the screen. In the case of the Special field, the operator MUST class charge the call before a database query can be done to verify the number.

If the operator enters a calling card number in this field, the personal identification number (PIN) may be masked. The DMS switch instructs TOPS IWS on whether the PIN number should be masked. If it is masked, an "**X**" is placed on the screen for each character in the PIN.

Up to 27 characters, including a maximum of 4 separators, may be displayed in this field when it is used for display.

Foreign calling cards are displayed unformatted in either normal or error color as appropriate.

If the directory or credit card number has been identified as involved in a high incidence of fraud, the digits are displayed in a predefined alert color.

If the directory or credit card number has associated screening restrictions, the digits are displayed in the predefined alert color.

If the DMS switch indicates that the digits are invalid but does not send the digits to the position, a question mark (?) is displayed in a predefined error color.

If the directory number has been identified with a database query failure, a question mark (?) is displayed in the field in the predefined alert color.

If the credit card number has been identified with a database query failure, the digits are displayed in the predefined alert color.

If automation was unused by the subscriber to enter the credit card number, a question mark (?) is displayed in the field in the normal color.

When a subscriber tries to complete a call on one inter-exchange carrier using a calling card restricted to another inter-exchange carrier, the calling card digits are displayed in the predefined alert color.

If the directory number or domestic credit card number digits are invalid, they are displayed unformatted in a predefined error color. The operator may edit the invalid digits by using the right and left arrow keys to move about the field, and to insert or delete digits. The operator must then press the START key to send the information to the DMS switch.

If the CCITT credit card number digits are invalid, they are displayed, formatted as much as possible, in a pre-defined error color.

If credit card digits are required by the DMS switch but are missing, a question mark (?) is displayed in the field in the predefined alert color.

There are no datafillable text strings associated with this field.

3.1.8.3 Special Information Field 16

This field is used to display additional information about third, special, or calling card numbers. The text strings in this field are displayed in the same text color (normal, alert, or error) as data in the Special Data Entry Field, with which the Special Information Field is associated. The strings displayed in this field may

contain up to 5 characters unless otherwise stated. The following text strings are displayed in this field:

Hot **String ID 0029**

Indicates a third-party, calling card, or special billing number that was locally identified as involved in a high incidence of fraud. This text is displayed in the predefined alert color.

Man **String ID 0030**

Indicates that the called directory number or calling card number entered requires manual validation.

Res **String ID 0031**

Indicates that the special number has screening restrictions.

Vfy **String ID 0032**

Indicates that a calling card, credit card, or third-party billing number must be validated through the Verify Special function. Refer to *TOPS IWS Base HMI Application Guide* for details about this function.

RPIN **String ID 0033**

Indicates that the personal identification number (PIN) of the calling card is restricted.

Acc **String ID 0034**

Indicates that a LIDB query for the third number has been accepted.

<xxx>

Indicates the revenue accounting office (RAO) number. The RAO number displayed is received from DMS switch.

ResIC **String ID 0045**

Indicates that the subscriber tried to complete a call on one inter-exchange carrier using a calling card restricted to another inter-exchange carrier or restricted from all inter-exchange carriers. This text is displayed in the predefined alert color.

CC Srv Denial **String ID 0046**

Indicates that the calling card number was rejected. This text string may be up to 17 characters long and is displayed in the predefined error color.

PIN Non Payment **String ID 0047**

Indicates that the calling card was rejected because of non-payment associated with this PIN. This text string may be up to 17 characters long and is displayed in the predefined error color.

PIN Srv Res **String ID 0048**

Indicates that the calling card was rejected because of a restriction on the type of call or service being attempted. This text string may be up to 17 characters long and is displayed in the predefined error color.

PIN Thr Exceed **String ID 0049**

Indicates that the calling card was rejected because of an exceeded threshold of invalid PIN number attempts. This text string may be up to 17 characters long and is displayed in the predefined error color.

NoMHA **String ID 0051**

Indicates that there is no mutual honoring agreement between the Local Exchange Carrier (LEC) and the calling card issuer. This text string may be up to 17 characters long and is displayed in the predefined normal text color.

3.1.8.4 Special Icon Field 17

This field may contain the following icons in the contexts specified:

Person Icon

Indicates that the call has been class charged as “Person Special Calling.” This icon is yellow.

Station Icon

Indicated that the call has been class charged as “Station Special Calling.” This icon is yellow.

Up Arrow Icon

Indicated a special called class charge.

Down Arrow Icon

Appears with the up arrow icon (in the Calling Icon Field) and the X icon (in the Called Icon Field) to indicate invalid billing information. It is also displayed in the Special Icon Field with the up arrow icon (in the Calling Icon Field) and question mark icon (in the Called Icon Field) to indicate missing billing information.

3.1.9 InterLata Carrier Fields

3.1.9.1 InterLata Carrier Field Label 18

This field contains the label identifying the InterLATA Carrier Field. This field may contain up to 4 characters. The following text string is displayed in this field:

IC **String ID 0035**

3.1.9.2 InterLata Carrier Data Entry Field 19

The operator uses this field as an input area for carrier code. The operator may enter up to 4 digits in this field.

When the operator finished entering the digits and presses the START key on the TOPS IWS keyboard, the digits are sent to the DMS switch. Once the DMS switch validates the digits, they are returned to the position and displayed on the screen.

Once the data has been terminated to the DMS switch, the information received is not editable.

The carrier code may be displayed alone in this field or in conjunction with the carrier name.

<Carrier Name>

This carrier name text is sent from the DMS switch. It is not translatable and is not datafilled in the TOPS IWS position. Up to 8 characters may be displayed as the carrier name.

If the data entered in this field is incorrect, the color in which it is displayed changes to a predefined error color. If the carrier code is displayed with the carrier name, both the code and name are displayed in the predefined error color.

3.1.9.3 InterLata Carrier Information Transfer Field 20

This field displays information about interLATA carrier transfers. This field may contain up to 10 characters. The following text strings are displayed in the IC Information Transfer field:

Xfr Err **String ID 0036**

Indicates that an attempt to transfer a subscriber to an interLATA carrier failed because the carrier is not known by the DMS switch.

Xfr IC **String ID 0037**

Indicates that the associated carrier services are not provided by the operating company and the call should be transferred to an interLATA carrier.

3.1.9.4 InterLata Carrier Information Field 21

This field is used to display information about the interLATA carrier. This field may contain up to 10 characters. The following text string is displayed in the IC Information field:

No Rate **String ID 0038**

Indicates that the rating requested is not allowed for the specified interLATA carrier.

3.1.10 Miscellaneous Fields

3.1.10.1 Miscellaneous Field Label 22

This field contains the label identifying the Miscellaneous Field. This field may contain up to 4 characters. The following text string is displayed in this field:

Misc **String ID 0039**

3.1.10.2 Miscellaneous Data Entry Field 23

This field is currently used for data entry and display for hotel room or authorization number. The room or authorization number is limited to 9 alphanumeric characters.

Once the data has been terminated to the DMS switch, the information received is not editable.

R **String ID 0040**

When displayed with up to 9 alphanumeric characters, this identifies a hotel room number.

A **String ID 0041**

When displayed with up to 9 alphanumeric characters, this identifies an authorization number.

When displayed in the position's predefined alert text color, this specifies the hotel room or authorization number is required but missing.

When displayed in the position's predefined error text color, this identifies an invalid hotel room or authorization number.

3.1.10.3 Hotel Customer Name Display Field 24

This field displays hotel customer name information.

N **String ID 0042**

When displayed with up to 6 alpha characters, this specifies a hotel guest's name.

When displayed with up to 6 alpha characters and in the position's predefined error text color, this indicates that the hotel guest's name is invalid.

3.1.10.4 CLI Directory Number Display Field 25

This field is used to display the CLI number when the Directory Number DID with DN class of CLI arrives at the position. This field can contain up to 31 characters.

CLI <formatted CLI number>String ID 0050

3.2 Data Entry

Before data can be entered into a data entry field in the Call Information Window, the data entry field must be active. The operator can tell which field is active by the location of the cursor. The cursor is always located inside the active field. If the field into which the operator wishes to enter data is not the active field, the operator must activate it by pressing one of the Call Information Window cursor control keys. Refer to “Call Information Window Cursor Control Keys” on page 33 for more information on these keys.

Once the field is activated, the operator may begin to enter data. Some data entry fields accept only digits, and others accept both digits and alpha text. For those that accept only digits, any alpha text that is entered is not placed in the data entry field and the keystroke is ignored.

Each data entry field accepts a limited number of characters. Once the maximum number of characters is entered, any subsequent input is ignored. The operator must either delete enough characters to allow more room in the field, or clear the field. If the field is cleared, the operator can then re-enter the data.

If the data has not been terminated, the operator may edit the data using the RIGHT and LEFT ARROW keys, the DESTRUCTIVE BACKSPACE key or ***** key (in the numeric keypad), the DELETE key, or the HOME key.

If the data has not been terminated, and the operator presses the cursor control key for the active field, the cursor is placed at the beginning of the field. If the operator presses the cursor control key a second time, the data is cleared. In addition, the operator may use the HOME key to move the cursor to the beginning of the field.

In the Calling and Called fields, data that has been terminated and validated is editable by pressing the EDIT key as long as the respective party is not connected (i.e. Rls Clg or Rls Cld). Once the EDIT key is pressed, the Calling or Called number is displayed unformatted with the cursor located at the end of the number. From this point the number can be edited with the Call Information Window cursor control keys, the RIGHT and LEFT ARROW keys, the DESTRUCTIVE BACKSPACE key or ***** key (in the numeric keypad), the DELETE key, or the HOME key.

In the Calling, Called, and Special fields, data that has been terminated and returns to the position unformatted and invalid may be edited using the Call Information Window cursor control keys, the RIGHT and LEFT ARROW keys, the DESTRUCTIVE BACKSPACE key or ***** key (in the numeric keypad), the DELETE key, or the HOME key. In the IC and Misc fields, data that has been terminated and returns to the position valid **or** invalid can **not** be edited. The IC and Misc fields can be cleared though at anytime by pressing their corresponding Call Information Window cursor control key twice.

If the data has not been terminated and the operator keys a Call Information Window cursor control key other than the key associated with the active field, the data is cleared from the active field, and the cursor moves to the new data entry field.

The RIGHT and LEFT ARROW keys, the DESTRUCTIVE BACKSPACE key, the DELETE key, the HOME key, and the EDIT key must be datafilled in the Keybind Utility. Refer to the *TOPS IWS RAMP and Provisioning User's Guide* for instructions on using the Keybind Utility. Cursor movement keys including RIGHT ARROW, LEFT ARROW, UP ARROW, DOWN ARROW, DELETE, and HOME should not be datafilled on a modifier key (e.g. ALT, CONTROL, and SHIFT) and should not be datafilled on a key combined with a modifier (e.g. CTRL+<any key>). If this is done, the datafill for the cursor movement key is ignored. For more information on this restriction, refer to the Keyboard Configuration Considerations section in the XKBOARD table description section in the *TOPS IWS Base Platform User's Guide* (formerly *Base Application Guide*).

If data has not been terminated and the operator presses a menu key (for example, FNCTS), the un-terminated data is automatically cleared.

If an invalid function is performed on a directory number, for example, and a no action reason is displayed in the Message/Status Area Window, the operator may be required to manually clear the data. Data can be cleared at anytime by pressing the associated Call Information Window cursor control key twice. The Call Information Window cursor control keys are discussed in the following section.

3.3 Call Information Window Cursor Control Keys

This group of keys controls location of the cursor in the Call Information Window. The cursor may be in one of five data entry fields in the Call Information Window. This group of keys allow the operator to select which of the Call Information Window's entry fields is to be active. The function of each key is identical in every way except for the entry field into which the cursor is placed when the key is pressed.

The cursor control keys include the **Clg**, **Cld**, **Spl**, **IC**, and **Misc** keys. When these keys are pressed, the cursor moves to the corresponding Call Processing entry field. For example, when the **Spl** key is pressed, the cursor moves into the Spl field of the Call Information Window.

The cursor control keys are listed below with a short description of each.

3.3.1 Clg

Pressing the Calling key moves the cursor to the Clg (calling) field of the Call Information Window.

3.3.2 Cld

Pressing the Called key moves the cursor to the Cld (called) field of the Call Information Window.

3.3.3 Spl

Pressing the Special key moves the cursor to the Spl (special) field of the Call Information Window.

3.3.4 IC

Pressing the InterLATA Carrier key moves the cursor to the IC (interLATA carrier) field of the Call Information Window.

3.3.5 Misc

Pressing the Miscellaneous key moves the cursor to the Misc (miscellaneous) field of the Call Information Window.

When no data has been entered into the Call Information Window's entry field, the cursor control keys cause the cursor to be moved as just described. When data has been entered into the entry field however, additional effects occur when the cursor control keys are pressed.

If data has been entered into a field, but the **Start** key has not been pressed, and a cursor control key corresponding to a field other than the one in which the cursor is currently located is pressed, the data is erased from the current field, and the cursor is moved to the new field. If the cursor control key is pressed for the field in which the cursor is currently located, the data is erased and the cursor returns to the beginning of the field.

When the operator enters data into a field and presses the **Start** key, the data is sent to the DMS switch for validation. The DMS switch returns the data to the position. If the data entered is correct, it is formatted and re-displayed in the field and the cursor is relocated to the beginning of the field. If the data entered is incorrect, the data changes color to a predefined error color and the cursor is relocated to the beginning of the field. When this data is displayed in the field, pressing a cursor control key for another field leaves the data displayed. If the cursor control key for the current field is pressed, the data is erased and the cursor remains in the field.

If the operator presses a cursor control key for a field that already contains data returned from the DMS switch, the cursor moves to the beginning of the corresponding field. If this same cursor key is pressed a second time, the data in the field is erased.

3.4 Call Information Class Icon Keys

The Class Icon keys offer a way for the operator to request a class charge for the call. When these keys are pressed, the appropriate class icon is displayed.

If a class icon key is pressed while the cursor is in the Misc or IC fields of the Call Information Window, it is ignored and no action is taken. If, however, a class icon key is pressed while the cursor is in the Clg, Cld, or Spl fields, a request for the appropriate class charge is made of the DMS switch, and when the DMS switch responds, the proper billing icon is displayed in the field’s icon field.

The class icon keys are:

3.4.1 Station

This is a class icon key for applying a “station” class charge. When this key is pressed, a request for a “station” class charge is sent to the DMS switch.

3.4.2 Person

This is a class icon key for applying “person” class charge. When this key is pressed, a request for a “person” class charge is sent to the DMS switch.

3.5 Miscellaneous Call Information Keys

3.5.1 Rls Cld

The Release Called key is used to release the Called party. It is also used as a terminating key like the **Start** key when the cursor is in the Called field and no connection is desired.

3.5.2 Ca Call

The Cancel Call key acts as a toggle key. When it is pressed the first time, the call is marked as cancelled. The cancelled mark is removed if the Cancel Call key is pressed a second time.

3.5.3 Pos Rls

This is the Position Release key. It is used to attempt to release a call from a TOPS IWS position.

3.5.4 Memo key

The Memo key is used to create a new memo and display or hide the Memo Window. The Memo Window contains memo text associated with the current call. For more information on the Memo Window, refer to “Memo Window” on page 59. NOTE: This key is not default datafilled and must be added using the Keybind Utility.

3.5.5 Clear Memo key

The Clear Memo key clears the contents of the Memo Window. For more information on the Memo Window, refer to “Memo Window” on page 59. NOTE: This key is not default datafilled and must be added using the Keybind Utility.

3.5.6 Edit key

The Edit key is used to begin an editing session in either the Calling Data Entry Field, the Called Data Entry Field, or the Memo Window. For more information on editing the data

entry fields, refer to “Data Entry” on page 32. For more information on editing the Memo Window, refer to “Memo Window” on page 59. NOTE: This key is not default datafilled and must be added using the Keybind Utility.

4.0 Call Information Window Message Status Area Usage

The Call Information Window makes use of the Message Status Area for three different displays. Please refer to the *TOPS IWS Base HMI Application Guide* for a detailed description of the Message Status Area and its associated fields..

4.1 AMA Clock Display

The AMA Verify clock is displayed in the Application Message Field V of the Message Status Area Window. The display of the clock indicates that a query is outstanding to the LIDB database or other external database accessed by the active service.

4.2 Handoff Icon Display

The Handoff Icons are displayed in the Application Message Field V of the Message Status Area Window.

The Hand Icon informs the operator that it is possible to handoff the call to an automated system.

The No-hand Icon informs the operator that it is not possible to handoff the call to an automated system.

4.3 Branding Icon Display

The Branding Icons are also displayed in the Application Message Field V of the Message Status Area Window.

The Branded Icon indicates that the call has been branded by an automated system before arriving at the position. This allows the operator to respond appropriately to the caller.

The Not Branded Icon indicates that the call has not been branded by an automated system, allowing the operator to respond appropriately to the caller.

5.0 Call Information Window Softkeys

Operator Assistance provides up to 16 customer-definable softkeys, which may be defined on any location of the keyboard. The softkey labels for the first eight softkeys (numbered 0-7 from left to right) are displayed in the bottom row of the softkey icons. The second eight (numbered 8-15 from left to right) are displayed in the top row. Each label may be 7 characters long. The text string identifies the function invoked when the softkey (or Shift softkey for softkeys 8-15) is pressed. Microsoft Sans Serif 8 point bold variable pitch font is used to display softkey labels.

There are two steps to define softkeys for OA. First, the actual softkey must be defined in the keyboard datafill. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on table XKBOARD. Second, the function ID and label for each softkey must be datafilled in XOAOPRSK.TBL. The function ID uniquely identifies the TOPS IWS function in the default table XFNCTS. Refer to *TOPS IWS Base HMI Application Guide* for details on table XFNCTS. A default Operator Assistance softkey set is provided. It consists of functions found in the default Functions Menu Window.

Any function defined to be used as a softkey should be datafilled in the position in the Functions Menu. If extra input is required to process the request, such as the Notify function, the Functions Menu Window is displayed. The menu item number corresponding to the selected function is shown in the first data entry field. The cursor is positioned in the second data entry field of the Functions Menu ready for operator input.

If the softkey function is not datafilled in the Functions Menu and extra input is required to process the request, the Functions Menu Window is displayed with a question mark (?) in the first data entry field of the Functions Menu instead of the menu item number. The cursor is positioned in the second data entry field of the Functions Menu, ready for operator input.

This is the default list of Operator Assistance softkeys:

1. No AMA
2. Notify
3. Time and Charges
4. Dial Rate
5. Hotel
6. Charge Adjust
7. Coin
8. Generate AMA
9. Ring Calling
10. Ring Called
11. Transfer IC

12.Special Called

13.Name

14.Coin Collect

15.Coin Return

16.Over Collect

Figure 7 shows the OA default softkey set.

FIGURE 7. Operator Assistance Default Softkey Set

6.0 Call Processing

6.1 Call Arrival

The Call Information and Call Details Windows are displayed when a call arrives at the position for a service the OA application has been datafilled to handle. All pertinent call information is displayed in the windows, the softkeys are displayed, and the cursor is positioned in one of the Call Information Window data entry fields as appropriate to the call type.

6.2 Call Release

When a call that has been handled by the OA application has been floated from the position, the Call Information and Call Details Windows remain displayed on the screen. There is, however, no cursor in the Call Information Window, and no softkeys are displayed. These windows remain displayed until another call arrives at the position for a service that the OA application does not handle. While no cursor is displayed, only the following keys are available: **Functions**, **Services**, **Application**, **OGT,** and **Trouble**.

6.3 Monitor End

The Call Information Window may be displayed while the service assistant or in-charge operators are monitoring. If this happens, the Call Information Window is cleared when the operator stops monitoring.

6.4 Lost Call Arrival

If the audible tone indicates the arrival of a new call and there is no corresponding update of screen information, the operator should invoke the Call Details function. The Call Details function displays of all of the call details available on the call.

6.5 Menus

6.5.1 Functions Menu

The operator accesses the Functions Menu Window through the **Functions** key. This key is valid with or without a call at the position when the Call Information Window is displayed. Functions hotkeys are supported in the same manner. Refer to *TOPS IWS Base HMI Application Guide* for details on the Functions Menu Window. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on menu hotkeys.

6.5.2 Services Menu

The operator accesses the Services Menu Window through the **Services** key. This key is valid with or without a call at the position when the Call Information Window is displayed. Service hotkeys are supported in the same manner. Refer to *TOPS IWS Base*

HMI Application Guide for details on the Services Menu Window. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on menu hotkeys.

6.5.3 Applications Menu

The operator accesses the Applications Menu Window through the **Application** key. This key is valid with or without a call at the position when the Call Information Window is displayed. Application hotkeys are supported in the same manner. Refer to *TOPS IWS Base HMI Application Guide* for details on the Applications Menu Window. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on menu hotkeys.

6.5.4 Trouble Menu

The operator accesses the Trouble Menu Window through the **Trouble** key. This key is valid with or without a call at the position when the Call Information Window is displayed. Trouble hotkeys are supported in the same manner. Refer to *TOPS IWS Base HMI Application Guide* for details on the Trouble Menu Window. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on menu hotkeys.

6.5.5 Outtrunks Menu

The operator accesses the Outtrunks Menu Window through the **OGT** key. This key is valid with or without a call at the position when the Call Information Window is displayed. Outtrunks hotkeys are supported in the same manner. Refer to *TOPS IWS Base HMI Application Guide* for details on the Outtrunks Menu Window. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on menu hotkeys.

6.5.6 Scripting Window

The OA application displays the Scripting Window to display helpful text information to the operator. Refer to *TOPS IWS Base HMI Application Guide* for details on the Scripting Window. The OA application determines the appropriate script message to display at call arrival based upon call information received from the DMS switch. If a Call Type for Queuing (CT4Q) value is received, OA refers to the IWS Base table XCT4QXSC.TBL to determine the ID of the script in SCRPTSCR.SCR to display. If no CT4Q is received, OA uses the Call Origination Type value received from the DMS switch referring to the IWS Base table XCORGXSC.TBL to determine the ID of the script to display. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for information on XCORGXSC.TBL and XCT4QXSC.TBL scripting cross reference files.

After determining which script ID is appropriate for the call, OA then determines if the Scripting Window should be automatically displayed by referring to the Enable entry for the IWSOA application in the SCRPTINI.INI file. If the Enable entry is 0, then the Scripting Window is not automatically displayed at call arrival. If the Enable entry is 1, the

Scripting Window is automatically displayed. The Scripting Window is displayed at the location and with the size specified in the SCRPTINI.INI file.

Default datafill for the IWSOA Enable entry in the SCRPTINI.INI file specifies that the Scripting Window should not be automatically displayed at call arrival. Default datafill for the Scripting Window location and size in the IWSOA application displays the Scripting Window as shown in Figure 8.

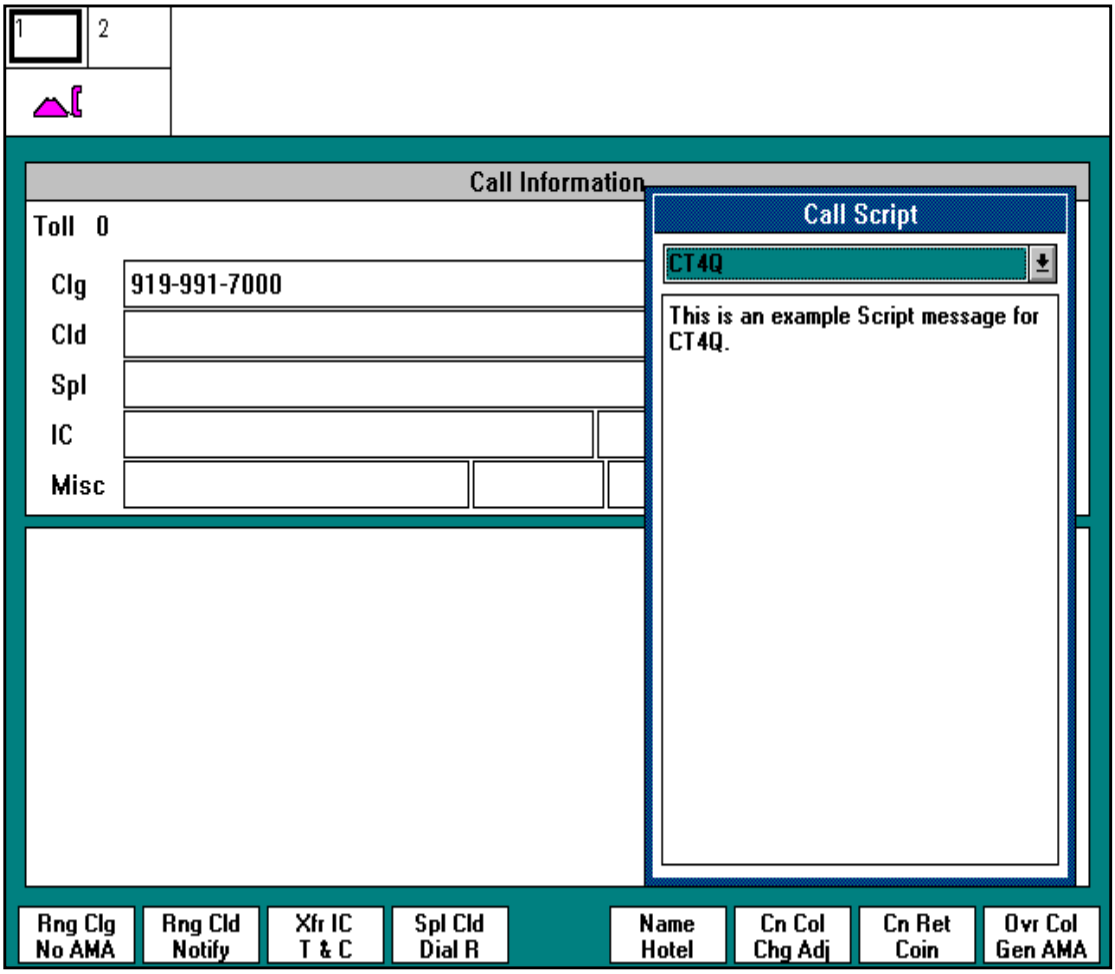

FIGURE 8. Scripting Window Displayed in the OA Application

At any time during the call, the Display Scripting Window key can be used to display the Scripting Window. This key will cause display of the window regardless of the setting of the IWSOA Enable entry in the SCRPTINI.INI file. This gives the operator the ability to display the window as necessary. When the Scripting Window is displayed in this manner the script message determined at call arrival is displayed in the window.

7.0 Call Details Window

This window is used to display the details associated with a call for a service provided by the Operator Assistance application. These details are provided in several fields in the Call Details Window. Figure 9 shows the Call Details Window in its location in the Operator Information Window.

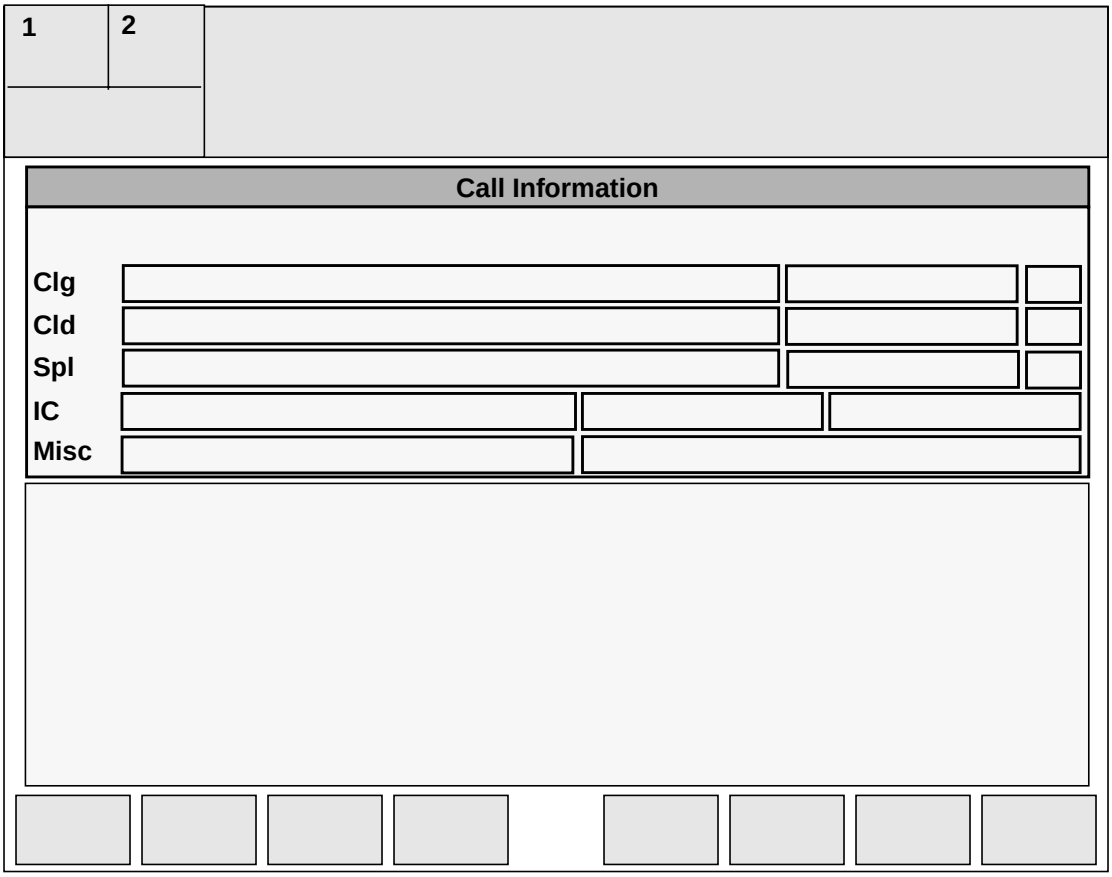

FIGURE 9. Call Details Window in Operator Information Window

7.1 Call Details Window Fields

In Figure 10, each field of the Call Details Window has been outlined and enumerated. In the discussion that follows, each field is discussed in terms of the text that may be displayed in it. When the DMS instructs the position that information displayed in a field is no longer valid, that information is erased. The Call Details Window is considered an extension of the Call Information Window and is displayed whenever the Call Information Window is displayed.

Monetary values that are displayed in the Call Details Window are formatted using information that is provided in the MPXPARM.INI file. If the currency information in the MPXPARM.INI file is out of range or invalid or the MPXPARM.INI file can not be found

during the OA application initialization, the following default values are used by the IWS OA application:

- the monetary symbol is displayed prior to the currency string,
- the monetary separator is displayed with two (2) digits to the right in the currency string,
- the monetary separator is a decimal point (.),
- and the monetary symbol is a dollar sign ($).

Refer to the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for currency information that is datafilled in the MPXPARM.INI file.

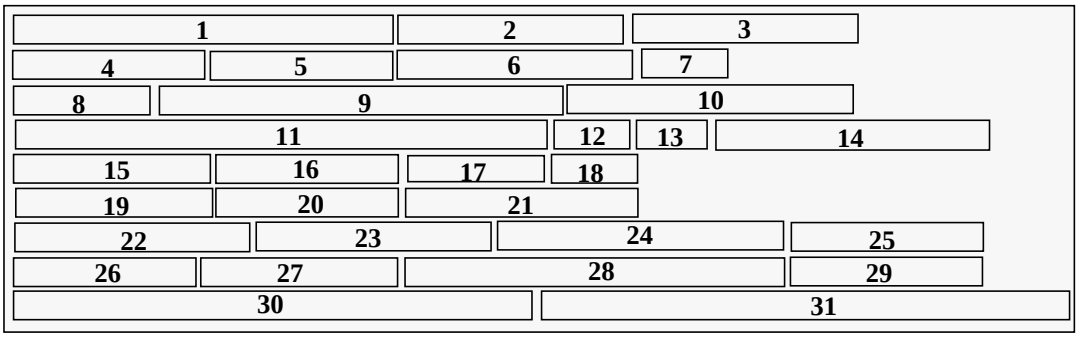

FIGURE 10. Call Details Window Fields.

Unless otherwise noted, all text which is displayed in this window is displayed in the MS San Serif 10 point normal variable pitched font. Text strings for the fields described in this section may be found in the OACALLD.LNG file.

7.1.1 Charge Field 1

The string below labels the Charge Field in the Call Details Window. This maximum string length of the charge label is 5 characters. Up to 25 characters may be displayed in this field.

Chg: **String ID 0000**

When the label is displayed in conjunction with "<amount>", this identifies the amount of money owed for a specific period of time on a coin paid call, a call held on loop with time and charges (T&C) requested, a hotel call held on loop, etc.

The monetary symbol, monetary separator, location of the monetary symbol, and location of the monetary separator in "<amount>" are taken from the datafill in the MPXPARM.INI file. See the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for currency information.

When the label is displayed in the predefined error color, this identifies an invalid charge amount.

7.1.2 Static Field 2

The Static Field is used to display call information messages received from the DMS. These messages remain visible until the end of the call or until the DMS sends a new message. The maximum string length for this field is 15 characters.

The following messages are displayed in the Static Field.

Start Tmg **String ID 0001**

Informs the operator that DMS has started timing when answer supervision is obtained.

Cancel Tmg **String ID 0002**

Indicates that the operator has requested cancellation of timing on the previous billable call.

Cancel Call **String ID 0003**

Indicates that the operator has cancelled the call while the calling party is off-hook.

Handoff **String ID 0004**

Indicates to the operator that the call was handed off to an Automated Alternate Billing Service (AABS).

Handoff?? **String ID 0005**

Indicates handoff to Automated Alternate Billing Service (AABS) failed and the string is displayed in the predefined error color.

No Handoff **String ID 0006**

Indicates to the operator that a resource failure occurred when handoff to AABS was attempted and the string is displayed in the predefined alert color.

Ring Clg?? **String ID 0007**

Indicates an attempt to ring a calling line without a calling number and the string is displayed in the predefined error color.

Ring Cld?? **String ID 0008**

Indicates an attempt to ring a called line when no called number is in the system and the string is displayed in the predefined error color.

Coin Col?? **String ID 0009**

Indicates either an operator- or DMS- initiated coin collection attempt for a coin telephone connected to an End Office with a line method of coin control. The attempt failed due to a “no trunks available” condition. The string is displayed in the predefined error color.

Coin Ret?? **String ID 0010**

Indicates either an operator- or DMS- initiated coin return attempt for a coin telephone connected to an End Office with line method of coin control, and the

attempt failed due to a “no trunks available” condition. The string is displayed in the predefined error color.

Print T&C **String ID 0011**

Identifies to the operator that the request for a hard copy printout of time and charges was completed.

Query Fail **String ID 0012**

Indicates to the operator that the credit card verification (i.e. LIDB) failed, the called number verification failed or the third number verification failed and the string is displayed in the predefined alert color.

Rating Query Fl **String ID 0013**

Indicates to the operator that the external rating query failed and the string is displayed in the predefined error color.

Rating Not Att. **String ID 0014**

Indicates to the operator that the external rating was not attempted due to network congestion, and the string is displayed in the predefined alert color.

7.1.3 OA Transient Field 3

The OA Transient Field is used to momentarily display system information. The text displayed in this field, a maximum of 15 characters, is shown for approximately three seconds. The text strings that may be displayed in this field are:

Gen AMA **String ID 0015**

Indication that an AMA record has been generated.

Rls Calling **String ID 0016**

Indicates the dropping of the connection between the position and the calling telephone. This release display is shown as the result of the operator doing release calling keying. Also for trunk types that drop the connection when the calling telephone goes on-hook, this display is shown. An example of this type of trunk is an ISUP trunk.

Rls Called **String ID 0017**

Indicates the dropping of the connection between the position and the called telephone. This release display is shown as the result of the operator doing release called keying. Also for trunk types that drop the connection when the called telephone goes on-hook, this display is shown. An example of this type of trunk is an ISUP trunk.

Ring Calling **String ID 0018**

Identifies an attempt to re-ring an on-hook calling telephone or another operator on a back connection.

Ring Called **String ID 0019**

Identifies an operator initiated attempt to re-ring an on-hook called telephone or another operator on a forward connection.

Coin Collect **String ID 0020**

Indicates an operator initiated request to collect coins at a coin telephone.

Coin Return **String ID 0021**

Indicates an operator initiated request to return coins to a coin telephone.

PCB Error **String ID 0022**

Indicates the Person Call Back function was invoked after entering a station class charge and the string is displayed in the error color.

Denied **String ID 0023**

Indicates an operator initiated service change has been denied by the DMS and the string is displayed in the predefined alert color.

Start CLG TBI **String ID 0024**

Indicates to the operator that the DMS attempted to send the toll break in signal to the calling party's line.

Stop CLG TBI **String ID 0025**

Indicates to the operator that the DMS attempted to break the connection, on the called line, created by the toll break in.

Start CLD TBI **String ID 0026**

Indicates to the operator that the DMS attempted to send the toll break in signal to the called party's line.

Stop CLD TBI **String ID 0027**

Indicates to the operator that the DMS attempted to break the connection, on the called line, created by the toll break in.

7.1.4 Minutes Field 4

The string below labels the Minutes Field in the Call Details Window. This maximum string length of the minutes label is 4 characters. Up to 12 characters may be displayed in this field.

Min: **String ID 0028**

The label is displayed in conjunction with "<minutes>:<seconds>" indicating the time in minutes and seconds requiring further payment by the subscriber for coin paid calls, calls held on loop when time and charges (T&C) is required, hotel calls held on loop, when the calling party requests T&C quote, etc.

This display also indicates the completion of a nonstandard notify time period which is requested by the subscriber on a non-coin call. The notify time is the time into a call when the operator notifies the parties that the time period has ended.

7.1.5 Overcollect Field 5

The string below labels the Overcollect Field in the Call Details Window. This maximum string length of the overcollect label is 3 characters. Up to 11 characters may be displayed in this field.

OC: **String ID 0029**

When the label is displayed in conjunction with "<amount>", this identifies the amount of money collected over and above the amount owed for a designated period of time.

The monetary symbol, monetary separator, location of the monetary symbol, and location of the monetary separator in "<amount>" are taken from the datafill in the MPXPARM.INI file. See the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for currency information.

When the label is displayed in the predefined error color, this identifies an invalid overcollect amount.

7.1.6 Notify Field 6

This field relays Notify information to the operator in the Call Details Window. A maximum of 16 characters may be displayed in this field.

Nfy: **String ID 0030**

When this label is displayed in conjunction with "<minutes>", it identifies a notify interval keyed by the operator or the system default interval for coin calls. The maximum string length is 4 characters.

Mtd Nfy: **String ID 0031**

When this label is displayed in conjunction with "<minutes>" and "<recall count>", this identifies a muted notify interval keyed by the operator with the number of times the call has returned to an operator. The "<recall count>" is a display that is enabled or disabled by datafill in the DMS. The maximum string length is 8 characters.

When either of the labels above are displayed in the error color, this indicates an invalid notify interval.

7.1.7 Memo Field 7

This field relays a message notifying the operator that there is a Memo associated with this call. The operator may then press the designated Memo display key which will display a window containing memo text that is associated with the current call. The Memo display key must be datafilled in the XKBOARD.TBL file. The maximum string length in this field is 6 characters.

Memo **String ID 0032**

Indicates that a memo is associated with the call that is at the position.

7.1.8 ACTS Info Field 8

This field relays ACTS information to the operator in the Call Details Window. Up to 7 characters may be displayed in this field.

ACTS **String ID 0033**

Indicates that the Automatic Coin Toll Service (ACTS) is active.

ACTS!! **String ID 0034**

Indicates a suspected resource failure has occurred during ACTS handling and the string is displayed in the predefined alert color.

7.1.9 Amount Due Field 9

The string below labels the Amount Due Field in the Call Details Window. This maximum string length of the amount due label is 10 characters. Up to 28 characters may be displayed in this field.

Amt Due: **String ID 0035**

Displayed in conjunction with **ACTS** in the ACTS Info Field and "<amount>" in the Amount Due Field identifies the amount left to be deposited by the subscriber.

Displayed in conjunction with **ACTS!!** in the ACTS Info Field and "<amount>" in the Amount Due Field indicates a failure occurred on a call that is normally handled entirely by ACTS and the string is displayed in the normal color**.**

The monetary symbol, monetary separator, location of the monetary symbol, and location of the monetary separator in "<amount>" are taken from the datafill in the MPXPARM.INI file. See the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for currency information.)

Displayed in conjunction with ACTS in the ACTS Info Field and the amount due label is displayed in the predefined error color in the Amount Due Field indicates an invalid amount due.

7.1.10 Overtime Type Field 10

The string below labels the Overtime Type Field in the Call Details Window. This maximum string length of the overtime type label is 14 characters. Up to 19 characters may be displayed in this field.

Overtime Type: **String ID 0036**

When the label is displayed in conjunction with one of the following strings, the overtime type of the call is specified. The maximum string length of the overtime type is 4 characters.

PRE **String ID 0037**

Indicates that the charges for the overtime period are to be collected before the overtime period.

POST **String ID 0038**

Indicates that the charges for the overtime period are to be collected after the overtime period.

7.1.11 Charge Adjust Field 11

The string below labels the Charge Adjust Field in the Call Details Window. This maximum string length of the charge label is 9 characters. Up to 35 characters may be displayed in this field.

Chg Adj: **String ID 0039**

When the label is displayed in conjunction with "<charge adjust code>", this indicates a charge adjustment manually entered by an operator.

Charge adjust indicators are used to interpret the charge adjust code in terms of money (using local currency), minutes, or number of calls that are credited. The three charge adjust indicators are provided in the MPXPARM.INI file. If the charge adjust indicator information in the MPXPARM.INI file is invalid or the MPXPARM.INI file can not be found during the OA application initialization, the following default values are used by the IWS OA application:

- the Money parameter is the character, "C",
- the Minutes parameter is the character, "M",
- the Occurrences parameter is the character, "T".

Refer to the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for charge adjust indicator information that is datafilled in the MPXPARM.INI file.

Charge Adjust Code may be displayed in the following formats:

Chg Adj: x hh:mm <Money><amount>
Chg Adj: x hh:mm <Minutes>nn
Chg Adj: x hh:mm <Occurrences>yy

where x indicates the charge adjust type
where hh:mm indicates the 24-hour clock time
where "<Money>" is the monetary charge adjust indicator
where "<amount>" indicates the monetary amount (The monetary symbol, monetary separator, location of the monetary symbol, and location of the monetary separator in "<amount>" are taken from the datafill in the MPXPARM.INI file. See the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for currency information.) where "<Minutes>" is the time charge adjust indicator where nn indicates the number of minutes where "<Occurrences>" is the occurrence charge adjust indicator where yy indicates the number of occurrences

When the label is displayed in the predefined error color or displayed in the predefined error color in conjunction with "<charge adjust code>", this indicates an invalid charge adjustment was made.

7.1.12 T&C Field 12

This field relays Time and Charges information to the operator in the Call Details Window. Up to 4 characters may be displayed in this field.

T&C **String ID 0040**

Indicates that the call should receive Time and Charges information upon subscriber disconnect.

7.1.13 PCB Field 13

This field relays Person Call Back information to the operator in the Call Details WIndow. Up to 4 characters may be displayed in this field.

PCB **String ID 0041**

Identifies a person call-back (PCB) call.

7.1.14 Text-To-Operator Field 14

The Text-To-Operator field displays information about an incoming call sent by the ISN by way of the DMS switch. Up to 20 ASCII characters of text (no label is associated with this display) are sent in the Data DID with a Data Type: OSSAIN Text and Data Reason: data included- final. For the AABS application on ISN, the text is a concatenation of 3 pieces of information:

1. Current call state

Indicates the current state of the call by displaying one of the following status:

- < 0+ > Need to obtain billing information from the caller.
- < 0+CLD > Collect call, but the party is not connected.
- < CLDCON > Collect call and the party is connected.
- < 0+3RD > Third Number Billing call but the billed party is not connected.
- < 3RDCON > Third Number Billing and the billed party is connected.

2. Operator Handoff Indicator

Indicates if the handoff to the AABS is allowed or not allowed. The text display in this portion may be datafilled by the customer.

- < OH+ > Handoff allowed default.
- < OH- > Handoff not allowed default.

3. Reason to transfer to operator

Indicates reason for the transfer to operator with one of the following:

- < HookFlash > Caller requested the operator by hook flash the phone.
- < NR Failed> Name Record Failed.
- < NO HO > Do not handoff to the AABS.

Example: For a call from AABS, where the called party is connected, Handoff is allowed, and the caller performed hook flash, the display would be: < CLDCON OH+ HookFlash >.

7.1.15 Trouble Field 15

The string below labels the Trouble Field in the Call Details Window. This maximum string length of the trouble label is 9 characters. Up to 13 characters may be displayed in this field.

Trbl: **String ID 0042**

When the label is displayed in conjunction with "<trouble code>", this identifies the trouble report code entered.

When the label is displayed in conjunction with "<trouble code>" and is in the predefined error color, this identifies an invalid trouble report code.

7.1.16 Ratestep Field 16

The string below labels the Ratestep Field in the Call Details Window. This maximum string length of the charge label is 5 characters. Up to 10 characters may be displayed in this field.

RS: **String ID 0043**

When the label is displayed in conjunction with "<rate step>", this identifies the rate step in effect for the call.

When the label is displayed in the predefined alert color, this identifies a missing rate step.

When the label is displayed in conjunction with "<rate step>" and is in the predefined error color, this identifies an invalid rate step.

7.1.17 No AMA Field 17

The text that can be displayed in the No AMA Field may be 8 characters in length. Operator Assistance messages displayed in the No AMA Field are shown below:

No AMA **String ID 0044**

The No AMA message indicates that there is no charge for the call.

Tmg/Ca? **String ID 0045**

Indicates that timing or cancellation is required for the call.

7.1.18 Dial Field 18

This field relays dial rate information to the operator in the Call Details Window. Up to 5 characters may be displayed in this field.

Dial **String ID 0046**

Indicates dial rate applies after the call is class charged. The call will be billed as though the subscriber dialed directly.

7.1.19 XFR Confirmation Field 19

This field relays call transfer information to the operator in the Call Details Window. Up to 13 characters may be displayed in this field.

For a QMS position, the following text string may be displayed.

Xfr **String ID 0047**

Indicates the transfer status of the call is set for call transfer.

For the ACD position, the following text strings may be displayed.

Xfr **String ID 0048**

Indicates that the call is an operator transfer call. This text is only displayed if the queuing system in use is ACD. Since this is the normal mode of operation, it is suggested that blanks be datafilled for this text string. It should be noted that default datafill for this language file has blanks datafilled for String ID 0037.

Xfr 1 **String ID 0049**

Indicates that the call is a transfer call from queue 1 or that the call has arrived from queue 1. This text is only displayed if the queuing system in use is ACD.

Xfr 2 **String ID 0050**

Indicates that the call is a transfer call from queue 2 or that the call has arrived from queue 2. This text is only displayed if the queuing system in use is ACD.

Xfr DA **String ID 0051**

Indicates that the call is a DA transfer call. This text is only displayed if the queuing system in use is ACD.

Xfr Err **String ID 0052**

Indicates that the request to transfer a call to another transfer queue failed and the string is displayed in the predefined error color.

7.1.20 CT4Q Confirmation Field 20

This field contains 9 characters that come from the table XCT4Q. The information identifies that a new call type for queueing is assigned by the operator.

This field is only displayed on a QMS position.

7.1.21 Language Confirmation Field 21

This field relays calling and called language information to the operator in the Call Details Window. This maximum string length of the language label is 8 characters. Up to 16 characters may be displayed in this field. The string below labels the Language Confirmation Field.

Lang: **String ID 0053**

This label is displayed in conjunction with either “<calling language>”, “<called language>” or both. The text for calling language and called language come from table XLANG. The text for each language may be up to 3 characters.

7.1.22 Ticket Number Field 22

The text in this field relays the ticket number information associated with the current call. The maximum length of the ticket label is 8 characters, allowing for a display of up to 20 characters in the field.

Ticket: **String ID 0054**

The ticket number displayed in conjunction with the ticket label may consist of the following two formats:

AAADDXXXXXX or DDXXXXXX

where

AAA	represents the transit code
DD	represents the day
XXXXXX	represents the digits of the ticket number

If the ticket number displayed is a valid ticket number, the string is displayed in the position’s normal text color.

If the ticket number displayed is an invalid ticket number, the string is displayed in the position’s predefined error color.

7.1.23 Alternate Route Field 23

This field is used to display a possible alternate route for connecting to an international destination when a connection via a direct route cannot be made. The text for this field is contained in table XALTRTE.TBL. The string length of the alternate route label is 8 characters, and the maximum string length for an alternate route name is 3 characters. This allows for a display of up to 12 characters in the Alternate Route Field.

Alt Rte: **String ID 0064**

7.1.24 Fixed Duration Field 24

The maximum string length of the Fixed Duration Field is 10 characters. The following text string may be displayed in this field.

Fixed Dur **String ID 0055**

The text in this field indicates that the call has been marked as a fixed duration call at the DMS. If there is no text displayed in this field, the call is not considered to be a fixed duration call. This display is valid only for international calls.

7.1.25 OLNS Restriction Field 25

This field is used to display the OLNS Restriction information during an OLNS call. It displays reading, “Rst: <OLNS Restriction Text>” and uses a string of 8 characters or less. The text specifies restriction information concerning the calling line. The total length of the this field is 13 characters.

Rst: **String ID 0066**

7.1.26 International INW/DA Field 26

The text in this field indicates that the operator has requested foreign assistance. The maximum string length of this field is 13 characters. The following messages may be displayed in this field.

Int’l: DA **String ID 0056**

Indicates the DMS response to the foreign Directory Assistance that was requested by the operator.

Int’l: DA?? **String ID 0057**

Indicates an invalid request for foreign Directory Assistance was issued by the operator and the string is displayed in the predefined error color.

Int’l: DA!! **String ID 0058**

Indicates that a city code is required for foreign Directory Assistance and the string is displayed in the predefined alert color.

Int’l: INW **String ID 0059**

Indicates the DMS response to a foreign Inwards call that was requested by the operator.

Int’l: INW?? **String ID 0060**

Indicates an invalid request for foreign Inwards call was issued by the operator and the string is displayed in the predefined error color.

Int’l: INW!! **String ID 0061**

Indicates that a city code is required for the foreign Inward call and the string is displayed in the predefined alert color.

7.1.27 Country Field 27

This field is used to display the country name for which foreign assistance was provided. The text for this field is contained in table XCDFA.TBL. The maximum string length for this field is 25 characters.

7.1.28 Country Direct Field 28

This field is used to display the country name during a country direct call. It displays text reading, "Direct: <ctry>” and uses a string of 8 characters or less. The text specifies the country from which the end user is calling. The total length of

this field is 16 characters.

Direct: **String ID 0065**

7.1.29 OLNS Alphanumeric Field 29

This field is used to display the OLNS Alphanumeric information during an OLNS call. It displays reading, “Txt: <OLNS Alphanumeric Text>” and uses a string of 8 characters or less. The text specifies additional information directly from the OLNS database concerning the calling line. The total length of the this field is 13 characters.

Txt: **String ID 0067**

7.1.30 Calling Party Name Field 30

The string below labels the Calling Party Name Field in the Call Details Window. This maximum string length of the calling party name label is 4 characters. Up to 37 characters may be displayed in this field.

A: **String ID 0062**

If the calling name displayed is a valid calling name, the string is displayed in the position’s normal text color.

If the calling name displayed is an invalid calling name, the string is displayed in the position’s predefined error color.

If the calling name displayed has been translated, and part of the string is truncated due to translation, a ‘*’ is appended to the end of the string, and the string is displayed in the position’s predefined alert color. For more information regarding character translation, please refer to the *TOPS IWS Base Platform User’s Guide* (formerly *Application Guide*).

7.1.31 Called Party Name Field 31

The string below labels the Called Party Name Field in the Call Details Window. This maximum string length of the called party name label is 4 characters. Up to 37 characters may be displayed in this field.

B: **String ID 0063**

If the called name displayed is a valid called name, the string is displayed in the position’s normal text color.

If the called name displayed is an invalid called name, the string is displayed in the position’s predefined error color.

If the called name displayed has been translated, and part of the string is truncated due to translation, a ‘*’ is appended to the end of the string, and the string is displayed in the position’s predefined alert color. For more information regarding character translation, please refer to the *TOPS IWS Base Platform User’s Guide* (formerly *Application Guide*).

7.2 Memo Window

NOTE: This functionality is only available in a Global Operator Services (GOS) environment.

In Figure 11, the Memo Window is shown with respect to the Call Details Window. The Memo window contains memo text that is associated with the current call.

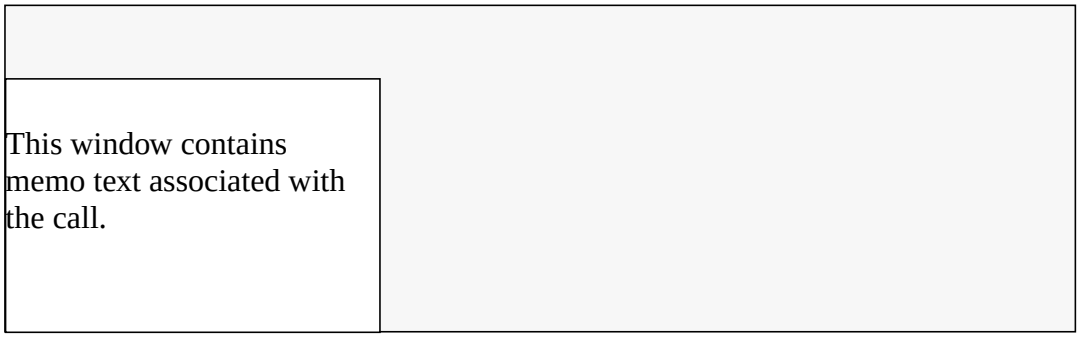

FIGURE 11. Memo Window

Several keys are utilized in this section. The **Memo**, **Edit**, **and Clear Memo** keys must all be datafilled using the Keybind Utility. Refer to the *TOPS IWS RAMP and Provisioning User's Guide* for instructions on using the Keybind Utility. For descriptions of either the **Memo**, **Edit**, or **Clear Memo** keys, refer to "Miscellaneous Call Information Keys" on page 35.

The operator may display or create a memo by pressing the **Memo** key. When the **Memo** key is pressed the Memo Window is displayed. If a memo is already associated with the call, the current memo text is displayed in the Memo Window. If a memo is not already associated with the call, then the Memo Window is displayed with the cursor located in the upper left-hand corner awaiting text input. Data entry is limited to 64 characters and the **Destructive Backspace**, **Home**, **Delete**, and the **Right**, **Left**, **Up**, and **Down Arrow** keys may all be used for editing. Once data has been entered, it is terminated with the **Start** key, sending the new memo to the DMS switch and hiding the Memo Window. After the memo has been validated by the DMS switch, the Call Details Memo field will be displayed indicating that a memo is associated with the call. For more information on the Call Details Memo field, refer to "Memo Field 7" on page 50.

After a memo has been created and validated, the operator has several editing options. First, to edit the current memo the operator can press the **Memo** key, followed by the **Edit** key. This will give the Memo Window focus and place it in edit mode. The current memo text is displayed with the cursor located at the end of the text. The **Destructive Backspace**, **Home**, **Delete**, and the **Right**, **Left**, **Up**, and **Down Arrow** keys may all be used for editing. Once editing is complete, it is terminated with the **Start** key. This will send the memo to the DMS switch for validation and hide the Memo Window.

Second, to enter a new memo the operator can press the **Memo** key, followed by the **Edit** key, and finally press the **Clear Memo** key. This will display the Memo Window, clear out the Memo Window contents, and place the cursor in the upper left-hand corner of the window. At this point the operator can enter a new memo. The same editing keys are

available as described above. Once input is completed, the operator presses the **Start** key, sending the new memo to the DMS switch for validation and hiding the Memo Window.

Third, to clear a memo from the call and the DMS, the operator can press the **Memo** key, followed by the **Edit** key, and finally press the **Clear Memo** key. At this point the operator presses the **Start** key with no data in the Memo Window. This will clear the memo from the DMS switch and remove the Call Details Memo field from the Call Details Window.

At any time during a memo entry or editing session if the operator presses one of the Call Information Window Control Cursor Keys, the Memo Window will be hidden and any editing changes will be discarded. For more information on the Call Information Window Cursor Control Keys, see “Call Information Window Cursor Control Keys” on page 33.

8.0 Installing/Updating the OA Application

OA installation is now handled as part of a global IWS installation utility. Consult the "TOPS IWS Software Installation and Setup" section of *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for instructions on installing the OA software.

9.0 Configuring the OA Application

For configuring the OA application, the TOPS IWS position must be at the DOS prompt. If the TOPS IWS position is in Windows, turn the power off and then back on. While the position is booting, press and hold down the ALT key until the DOS prompt appears. When the position finishes booting, the DOS prompt is displayed.

Follow these three steps:

1. Configure the OA Data files.
2. Configure the IWS base application files.
3. Configure the DOS/Windows files.

9.1 Configuring OA Data Files

9.1.1 Configuring OA Language Files

The OA screen text is datafillable by modifying the OA language files. Each file provides the text displays for a single OA window. English language files are the default. If different languages are required, the user is responsible for modifying the different language files in the **c:\mpxbase\datafill** directory.

Refer to *TOPS IWS RAMP and Provisioning User's Guide* for information about the Provisioning tool and using it to alter IWS language files.

For more information on the OA language files, refer to "Language Data Files" on page 67.

The TOPS IWS position must be rebooted for any language file changes to take effect.

9.1.2 Configuring OA Table Files

Tables are data files, some of which must match DMS switch tables. At installation of the OA application, these files are automatically copied to the **c:\mpxbase\datafill** directory. The file extension for these table files is .TBL.

Refer to *TOPS IWS RAMP and Provisioning User's Guide* for information about the Provisioning tool and using it to alter IWS table files.

For more information on the table files used by the OA application, refer to "Table Data Files" on page 67.

The TOPS IWS position must be rebooted for any table file changes to take effect.

9.2 Configuring IWS Base Application

9.2.1 Configuring MPXINI.INI

The MPXINI.INI file contains a listing of the applications that the TOPS IWS base application will run when the TOPS IWS position is started. To add the OA application to

the MPXINI.INI file, use the IWS Provisioning tool. Refer to *TOPS IWS RAMP and Provisioning User's Guide* for information about the IWS Provisioning tool and using it to alter IWS .INI files.

If you want the OA application to be the default application for the position (that is, the default application to switch to if a call arrives at the TOPS IWS position and no application is loaded to process it), the OA application should be assigned as the default registering application. Otherwise, the OA application should be defined as one of the registering applications.

The TOPS IWS position must be rebooted for any MPXINI.INI file changes to take effect.

9.2.2 Configuring XSERVS.TBL

In order for the TOPS IWS base application to know about the services that the OA application provides, the file XSERVS.TBL must be modified. For specific information on editing the XSERVS.TBL file, refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*).

The TOPS services listed in this table must refer to the same TOPS services datafilled in DMS switch Table TQMSSERV for the QMS queuing system. If the ACD queuing system is used instead of QMS, the TOPS services listed in this table must refer to the same TOPS services as datafilled in DMS switch Table SERVICES. Add a data line to the file for each OA-provided service. Each service in the XSERVS.TBL file that is to be provided by the OA application must specify the following parameters:

Application Tag: "IWSOA"

Billing Application Tag: "IWSOA"

The Application Tag field indicates that the service is provided by the OA application. The Billing Application Tag field indicates that the OA application also provides billing functions for the service. The Service Description and Service Type Text fields can be any text string that appropriately describes the service. To change the XSERVS.TBL, use the IWS Provisioning tool. Refer to *TOPS IWS RAMP and Provisioning User's Guide* for information about the provisioning tool and using it to alter IWS table files.

Here is an example of what a line of datafill for a service provided by the OA application would look like:

```
;TOPS           Billing
;Serv     Appl  Appl   Service                          Service
;Num      Tag   Tag    Description                      Type Text
;------------------------------------------------------------------------------------------
0         "IWSOA""IWSOA""Toll and Assistance"           "Toll"
```

The TOPS IWS position must be rebooted for any XSERVS.TBL file changes to take effect.

9.2.3 Configuring MPXPARM.INI

For specific information on changing TOPS IWS parameters in the MPXPARM.INI file, refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*). The TOPS IWS position must be rebooted for any MPXPARM.INI file changes to take effect.

9.2.4 Configuring SCRPTINI.INI

In order for OA to display the Scripting Window automatically at call arrival, a section must exist in the SCRPTINI.INI initialization file for the IWSOA application. By default a section already exists for IWSOA with the Enable entry set to 0. This value for the Enable entry specifies that IWSOA will not display the Scripting Window automatically at call arrival. Use the IWS Provisioning tool to set this Enable entry for IWSOA to the desired entry to control automatic display of the Scripting Window. The Scripting Window display location and size can also be altered with the Provisioning tool. Refer to *TOPS IWS RAMP and Provisioning User's Guide* for more information about the Provisioning tool and using it to alter the SCRPTINI.INI. Refer to *TOPS IWS Base HMI Platform Guide* for more information on the SCRPTINI.INI file and its contents. The TOPS IWS position must be rebooted for any SCRPTINI.INI file changes to take effect.

The application name used for the IWSOA section name follows:

Application Name: "IWSOA"

9.2.5 Configuring SCRPTSCR.SCR

For specific information on adding or changing script messages in the SCRPTSCR.SCR file for display in the Scripting Window, refer to *TOPS IWS Base HMI Application Guide*. The TOPS IWS position must be rebooted for any SCRPTSCR.SCR file changes to take effect.

9.2.6 Configuring the OA Keyboard

For specific information on changing the keyboard layout, refer to the Data Schema section of *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*). The TOPS IWS position must be rebooted for any keyboard changes to take effect.

9.3 Configuring DOS/Window Files

9.3.1 Configuring autoexec.bat

The AUTOEXEC.BAT file contains several variables used for the operation of the TOPS IWS base application. For the OA application to run correctly, this file must be modified to include the search path for finding the OA files. This is done during the TOPS IWS base installation. To add the search path, follow these steps:

Change to the root directory by typing:

cd c:

Using the DOS editor, edit the AUTOEXEC.BAT file by typing:

edit autoexec.bat

The AUTOEXEC.BAT file contains a line called PATH= and a list of paths. Add the following line below the PATH line for the OA application:

PATH=%PATH%;c:\mpxoa

Note: If this line is already in the AUTOEXEC.BAT file, it has been added previously and does not need to be added again. Exit the DOS editor without saving the file.

Save the file, and exit the DOS editor.

9.4 Microsoft Windows

The OA application is a Microsoft Windows application, and as such many of the features and capabilities of MS-Windows apply.

Note: The following Microsoft Window functionality is NOT supported.

- Alt + Tab key sequence
- Alt + Esc key sequence
- Control + Escape key sequence

See *Microsoft Windows user's guide* for complete and specific details.

10.0 Data Schema

TOPS IWS datafill and its location is described in detail in the *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*). See the *TOPS IWS RAMP and Provisioning User's Guide* for information on how to use the IWS provisioning tool to change this datafill.

10.1 Language Data Files

Each window has language data files that contain information such as the window title and field labels. The file extension for IWS language files is .LNG.

Table 4 lists the language files required by the Operator Assistance application.

TABLE 4. Operator Assistance Language Files

Window	Language File
Call Information Window	OACINFO.LNG
Call Details Window	OACALLD.LNG

Each language data file, as described in the appropriate sections in this document, contains the text strings assigned to specific string IDs. The content of each string may be changed as desired, up to that string's maximum length.

The string IDs must be sequentially numbered, starting from 0. String IDs in language files are read consecutively up to the maximum expected String ID. If duplicate string IDs are encountered as a language file is read, this is considered a fatal error. If an out-of-sequence string ID is encountered, an error message box is displayed to indicate the fatal condition. If the quoted text string is longer than the allowed field length, the string is truncated. Since this is not considered an error condition, no indication is given.

The default language data files provided with TOPS IWS are English text. The content may be changed to reflect any language supported by the ANSI character set.

10.2 Table Data Files

The only table datafill file provided by the OA application is table XOAOPRSK.TBL. At installation of the OA application, this table is automatically copied to the default datapath directory, as defined by the Datapath variable in the MPXINI.INI file. Table 6 identifies this table.

TABLE 5. Operator Assistance Tables

Description	Table File
OA Softkey Table	XOAOPRSK.TBL

Table 6 lists the tables provided by the TOPS IWS Base that are required by the Operator Assistance application.

TABLE 6. IWS Base datafill tables used by IWSOA

Description	Table File
Call Arrival Status Table	XCASTS.TBL
Call Origination Table	XCLLORIG.TBL
Call Type for Queuing Table	XCT4Q.TBL
Language Name Table	XLANG.TBL
Restricted Billing Table	XRBLG.TBL
Trunk Group Display Table	XTGDSPL.TBL
Country Name Table	XCDFA.TBL
Alternate Route Table	XALTRTE.TBL
Call Origination Scripting Cross Reference Table	XCORGXSC.TBL
Call Type for Queuing Scripting Cross Reference Table	XCT4QXSC.TBL

10.3 Table XOAOPRSK

The Operator Assistance Softkey table is used to define the billing softkeys presented to the operator during call arrival when the Call Information Window is displayed. It is applicable to both ACD and QMS positions. TOPS IWS table XOAOPRSK has no corresponding DMS switch table.

10.3.1 XOAOPRSK Field Descriptions

Table 7 shows the range of values of the fields belonging to TOPS IWS table XOAOPRSK. The table is followed by a description of each field.

TABLE 7. XOAOPRSK Fields

Field Name	Range of Values
Softkey Label ID	0-15 decimal
Function ID	0 - 65 decimal
Display Label	Up to 7 ASCII characters

Softkey Label ID

Contains an integer value associated with the softkey being defined.

(0 - 7, unshifted)
(8 - 15, shifted)

Function ID

Contains an integer value that uniquely defines the TOPS IWS function that the OA softkey will invoke when the softkey is pressed. This value must correlate with the function ID and function discussed in *TOPS IWS Base HMI Application Guide*.

Display Label

Contains a normal ASCII text string that identifies the function to be invoked when the softkey is pressed. The text must be enclosed by double quotation marks.

10.3.2 XOAOPRSK Sample Datafill

```
;
;+
; ------------------------------------------------------------------------
; Table: XOAOPRSK.TBL
; ------------------------------------------------------------------------
;
; Description:
; --------------
; This table supplies softkey translations for the Call Information
; Window.
;
; The softkeys must be datafilled in the keyboard datafill table.
;
; Softkeys 0-7 are unshifted softkeys. The labels are displayed
; on the bottom of the softkey icon and can be up to 7 characters.
; Softkeys 8-15 are shifted softkeys. The labels are displayed
; on the top of the softkey icon and can be up to 7 characters.
;-
;
; Softkey             Function            Display
; Label ID            ID                  Label
;------------         ---------           ------------
   0                  23                  “No AMA”    ;No AMA
   1                  11                  “Notify”    ;Notify
   2                  18                  “T & C”     ;Time and Charges
   3                  6                   “Dial R”    ;Dial Rate
   4                  16                  “Hotel”     ;Hotel
   5                  13                  “Chg Adj”   ;Charge Adjust
   6                  15                  “Coin”      ;Coin
   7                  41                  “Gen AMA”   ;Generate AMA
   8                  3                   “Rng Clg”   ;Ring Calling
   9                  4                   “Rng Cld”   ;Ring Called
   10                 17                  “Xfr IC”    ;Transfer IC
   11                 44                  “Spl Cld”   ;Special Called
   12                 21                  “Name”      ;Name
   13                 8                   “Cn Col”    ;Coin Collect
   14                 7                   “Cn Ret”    ;Coin Return
   15                 9                   “Ovr Col”   ;Over Collect
;
;
; end of data
;
```

a

11.0 Engineering Information

11.1 TOPS IWS Hardware

The following list describes the minimum system configuration recommended for the TOPS IWS positions:

- 80486 50MHz based PS/2 with 16 Kbytes of cache, 8 Mbytes of RAM, 104 Mbytes of hard disk, and 9518 VGA monitor
- IBM PS/2 host-connected compatible keyboard
- IBM token-ring adapter card supporting 4MHz token ring
- NT digital telephony card
- multistation access units (MAU) connection. Each MAU provides termination for up to eight positions.

Larger, more powerful PCs may be required for sites that run a fully loaded TOPS IWS position.

The terminal hardware requirements may also increase or change over time for one or more reasons:

- Increased requirements specified by commercial products such as DOS or Windows
- Increased requirements caused by additional applications. For example, an application may require a faster processor, greater disk storage, or additional RAM.
- Discontinuation of the selected terminal by IBM

12.0 Performance

Performance in the TOPS IWS position may vary based on any of the following factors:

- First and foremost is the processor selection. Although the software runs on any 386SX or higher processor, the faster the machine the better the performance. Note: The commercial products DOS and Windows also have minimum hardware requirements that must be considered.
- Since the TOPS IWS position supports user applications as well as the base applications (BASEHMI, OA, OIA, DA), performance characteristics are influenced by the number and type of applications installed on a position.
- When DMS Services or applications are being swapped on the TOPS IWS position, performance varies depending on the number of applications currently running. This includes call arrival, when the TOPS IWS Base automatically swaps to the application providing the service indicated by the DMS switch.
- The combination of cluster size (4, 16, 20) and DMS Gateway position processor type also influence overall system performance.
- Synchronization of the initial screen paint with the generation of the call-arrival tone depends on the DMS switch host/remote and the DMS switch stand-alone configuration.
- The DMS switch traffic load is another important factor affecting the performance of the position.

13.0 Operator Assistance Logs

The logs generated by the OA application are sent to the TOPS IWS Base Log Application. Refer to *TOPS IWS Base Platform User's Guide* (formerly *Application Guide*) for specific information on the Log Report Format and on how to view the logs. A list of logs generated by the OA application (ciwlogs.doc) may be found in the **c:\mpxoa** directory. A list of logs generated by the Call Details application (cldtlogs.doc) may be found in the **c:\mpxoa** directory. Both files may be viewed with the editor of your choice.

14.0 Initialization/Runtime Errors

This section describes errors in the TOPS IWS Operator Assistance application that occur during initialization or runtime and cause the display of a Microsoft Windows message box. These are errors that require immediate action to resolve the problem. A log might not be able to be created during initialization, so these messages are the only way to inform the user of a problem.

A message box can usually be cleared by pressing the space bar on the keyboard. Depending on the nature of the error, initialization of the Operator Assistance application may or may not fail.

14.1 Message Box Data File Location

A list of descriptions of the message boxes generated by the OA application (ciwmsgs.doc) may be found in the **c:\mpxoa** directory. A list of descriptions of the message boxes generated by the Call Details application (cldtmsgs.doc) may be found in the **c:\mpxoa** directory. Both files may be viewed with the editor of your choice.

15.0 Appendix: Abbreviations

AABS Automated Alternate Billing System

ACD Automatic Call Distribution

ACTS Automatic Coin Toll Service, a feature that enables the operating company to handle long distance (1+) calls from a coin station without operator assistance.

AMA Automatic Message Accounting, an automatic recording system that documents all the necessary billing data of subscriber-dialed long distance calls.

ANI Automatic Number Identification

ARAN Automatic Room and Authorization Number

API Applications Programmer's Interface, the definition of the software interfaces that must be used by applications that will execute in the IWS system.

BLV Busy Line Verification, a service provided at the subscriber's request for obtaining operator assistance to determine if a called line is in use or out of order.

BNR Bell-Northern Research

CAMA Centralized Automatic Message Accounting, a system that produces itemized billing details for subscriber-dialed long distance calls.

CIW Call information window

CLD Called (party)

CLG Calling (party)

DA Directory assistance

DAS Directory Assistance System

DMS Digital Multiplex System

DOS Disk Operating System, the operating system used by personal computers.

FADS Force Administration Data System

GOS Global Operating System

HMI	Human-machine interface
IBM	International Business Machines, Inc.
IC	Inter-LATA carrier
IWS	Intelligent Workstation
LAN	Local area network
LNP	Local number portability
LATA	Local access and transport area
OGT	Outgoing trunk
ONI	Operator number identification
MS	Microsoft
NEA	Non-equal access
NPA	Numbering plan area, any of the designated geographical divisions of the United States, Canada, Bermuda, the Caribbean, Northwestern Mexico, and Hawaii within which no two telephones have the same seven-digit number.
NXX	An American central office code. A general way of referring to the three digits representing the central office code in a telephone number.
OA	Operator Assistance
OIA	Open Information Access
ONI	Operator number identification
OPP	Open position protocol, the interface specification for the interworking between the DMS switch and a position supporting an operator.
PCB	Person call back
QFADS	Queue Management System Force Administration Data System
QMS	Queue Management System
QTADS	QMS Traffic Office Administration Data System
SA	Service assistant

SPID	Service provider identifier
T&C	Time and charges, a service provided by operators whereby the duration of and charges for a long distance call are quoted to a subscriber on request.
TADS	Traffic Office Administration Data System
TOPS	Traffic Operator Position System, a call processing system made up of a number of operator positions.
TTY	Teletypewriter

16.0 Appendix: References

TOPS IWS Base Platform User's Guide, 297-2251-010, (formerly ***Base Application Guide***)

The IWS base consists of the hardware and software that make up the platform used for operator services applications such as directory assistance, intercept, and toll and assistance services.

This document describes the capabilities of the TOPS IWS base platform. It contains base hardware and software installation instructions for all applications, base tool usage, and data schema, system engineering, performance, maintenance, and other miscellaneous information. This document is intended for operating company personnel and Northern Telecom (Nortel) personnel who support TOPS IWS operations.

TOPS IWS Base HMI Application Guide, 297-2251-013

The base HMI application provides a common HMI across all applications for basic position functions, including logon, statistics, and menus.

This document describes the base HMI. It is intended for methods and training personnel, managers, and craftspeople. It explains how an operator logs on and how the operator positions function, including service assistance and in-charge positions. It also documents the QMSCASE application, which combines the functionality of a traditional service assistant and in-charge manager with that of a general operator. It describes screen displays, keyboard functions, menus, scripting capabilities, and keying sequences. In addition, this document explains the display string datafill required for base HMI displays, and the base datafill configuration required to run the application in the position. Installation instructions for this application appear in *TOPS IWS Base Platform User's Guide*, 297-2251-010.

TOPS IWS RAMP and Provisioning User's Guide, 297-2251-015

The remote access maintenance position (RAMP) lets you maintain other IWS positions from a single position. For example, you can download software, change datafill, and view system error messages for all IWS positions.

This document explains how to distribute software and how to use the profiler tool to gather information about other positions, as well as how to use the provisioning and associated keybind utilities. It is intended for operating company personnel and Northern Telecom (Nortel) personnel who support TOPS IWS operations. A basic knowledge of the TOPS IWS system, the DOS environment, and the Microsoft Windows environment is assumed within this document. Installation instructions for this application appear in *TOPS IWS Base Platform User's Guide*, 297-2251-010.

Open Position Protocol

This document provides the functional description and interface specification for the interworking between the DMS switch and a position supporting a human

operator. This is a licensed document that may be obtained through Northern Telecom (Nortel).

Microsoft Windows User's Guide

This document is provided by Microsoft. It describes the Windows user interface and the various tools that Microsoft provides with Windows.

DOS User's Manual

This document is provided by Microsoft. It describes the user interface and the tools that Microsoft provides with DOS.

17.0 Appendix: Revisions

17.1 Revisions from Release 1 to Release 2

17.1.1 VO - IWS02.92

- In Release 2, the OA Application is no longer required in the position. It is used only for Toll and Assistance services. It may also be used to provide billing for other applications, such as Directory Assistance.

  Previously, the OA Application was required in the position because it provided such functionality as operator logon to the DMS switch, operator password functionality, operator statistics information, position color, and position and call processing information. This functionality is now provided by the Base HMI Application. Refer to *TOPS IWS Base HMI Platform Guide* for more information on the functionality provided by the base HMI application.

- The application tag of the OA Application as it is entered into the XSERVS.TBL is IWSOA.

  In Release 1, the application tag of the OA Application was MPXOA.

- The InterLATA Carrier Information Transfer field is added to the InterLATA Carrier line of the Call Information Window. The text strings for this field are datafilled in the language file OACINFO.

  This information was previously displayed in the message/status area.

- The Miscellaneous Data Entry field in the Miscellaneous line of the Call Information Window is used for data entry and display of hotel room or authorization number. The new text string for the authorization number is datafilled in the language file OACINFO.

  Previously, the Miscellaneous Data Entry field was used by the operator to enter only the hotel room.

- The Miscellaneous Information field in the Miscellaneous line of the Call Information Window is named the Hotel Customer Name Display field and is used to display only the hotel customer name.

  Previously, the Miscellaneous Information field was used to display the Hotel Room and the Hotel Customer Name.

- The Call Information Window is displayed only when the OA Application becomes active, as when for example a toll call arrives at the position.

  Previously, the Call Information Window was displayed when the operator moved from the Assigned Activities Window to accept calls and no calls had been presented to the operator. It was also displayed during an operator's access to the OIA database.

- The Call Details Window is now displayed at all times when the Call Information Window is displayed.

Previously, the Call Details Window was displayed only when the Call Information Window was displayed and there was information in the Call Details Window that needed to be displayed for the operator.

- The Call Details Window is expanded across the IWS position screen.

  Previously, the width of the Call Details Window was half the width of the IWS screen.

- The number of Call Details Window fields is increased due by moving call-processing information from the message/status area to the Call Details Window. Refer to *TOPS IWS Base HMI Application Guide* for more information on the changes to the message/status area.

- The location of the fields in the Call Details Window is redefined because of the increased number of fields and the increased amount of call-processing information displayed in the Call Details Window. Refer to the “Call Details Window” on page 45 of this document for information on the location of the Call Details fields and the text displayed in each field.

- New functionality displays provided by the OA Application are shown below. The text strings for these displays, except for authorization number, are datafilled in the language file OACALLD. The new text string for the authorization number is datafilled in the language file OACINFO.

  - Muted Notify with recall counts
  - Overtime Type
  - Ticket Number
  - Fixed Duration
  - International DA
  - International Inwards
  - Country Display
  - Calling Party Name
  - Called Party Name
  - Authorization Number

- The two language files provided by the OA application are

  - OACINFO.LNG for the Call Information Window text displays
  - OACALLD.LNG for the Call Details Window text displays

- The only table file provided by the OA application is

  - XOAOPRSK.TBL for the OA application softkeys

- Other table files required by the OA Application are provided by the IWS Base. Refer to *TOPS IWS Base Platform Guide* for information on table files provided by the IWS Base.

Many of these tables were provided by the OA Application in Release 1.

- SWERRs are not supported in Release 2. All of the OA Application SWERRs are converted to LOGs.

17.1.2 VO - IWS02.93

- At call arrival of a 1+ DA Hotel call when billing is required, the cursor is placed in the Miscellaneous Field instead of the Special Field of the Call Information Window.
- When a DA call arrives at the position from a restricted number, with OA as the billing application, the Call Information Window will contain the DA restricted billing information associated with the call. If the call is a toll call, the Call Information Window will display the toll restricted billing information.

17.2 Revisions from Release 2 to Release 4

17.2.1 VO - IWS040AR

- Addition of character translation to the A and B Party Name fields.
- Addition of AMA clock display in the Application Message V field while a query is outstanding to an external rating database.
- Addition of “Rating Query Fl” and “Rating Not Att.” to OACALLD.LNG file.
- Addition of display for “Rating Query Fl” and “Rating Not Att.” in the Static Field of the Call Details Window.
- Addition of display of the “Memo” string in the new Memo field to alert the operator that there is a memo associated with the call. This is a GOS (Global Operator Service) feature.
- New datafillable key in the OA application which will display or hide the memo window. This is a GOS (Global Operator Service) feature.
- Addition of “Start CLG TBI”, “Stop CLG TBI”, “Start CLD TBI”, & “Stop CLD TBI” to OACALLD.LNG file. These will appear in the transient field of the call details window.
- Enhanced editing capabilities for the Calling Number, Called Number, Special Number, Calling Name, Called Name, and Memo input fields. The new editing capabilities include movement of the cursor using the RIGHT and LEFT arrow keys and the HOME key, deleting information using the DELETE key, and inserting at the cursor position.

17.3 Revisions from Release 4 to Release 4.1

17.3.1 Beta load - IWS041AS

- A new installation option “r” is added to the instoa command to load files for distribution with RAMP.

17.4 Revisions from Release 4.1 to Release 5

17.4.1 Beta load - IWS050AT

- A new field added to display the calling line identifier (CLI) number when the directory number data identifier description(DID) with DN class of CLI arrives at the position in the Call Information Window.
- An additional function was added to the Call Details Window to display a country name during a country direct call.

17.4.2 Beta load - IWS050BS

- Information has been added to this document covering additional displays of ‘Rls Calling’ and ‘Rls Called’. The introduction into the network of new trunk types such as ISUP trunks causes these additional displays.

17.5 Revisions from Release 5 to Release 6

17.5.1 Beta load - IWS060AR

- Addition of the **Edit** and **Clear Memo** keys for use in editing the Calling and Called numbers and the memo.
- Additional editing options added to the Calling and Called Number Fields.
- New process for creating and editing memos.
- OA application now displays the Scripting Window. When enabled for the OA application in the SCRPTINI.INI file, the Scripting Window can be displayed automatically at call arrival based on Call Origination Type or CT4Q. The application also responds to the Display Scripting Window key to display the Scripting Window regardless of the enable setting in the SCRPTINI.INI file.
- A new field has been added to display Text-To-Operator information in the Call Details window.
- A new No Mutual Honoring Agreement (NoMHA) display has been added to the Special Information field in the Call Information Window. This text will display when there is no mutual honoring agreement between the Local Exchange Carrier (LEC) and the calling card issuer during calling card calls. Note, this functionality is dependant upon a TOPS07 load being installed in the DMS 200 switch.

- The Equipment Indicator Display for the OLNS feature will be displayed in the Station Class Information Field of the Call Information Window in the place of billing restrictions for OLNS calls.
- There are two new fields in the Call Details window for the OLNS feature which display OLNS Restriction information and OLNS Alphanumeric text.

17.6 Revisions from Release 6 to Release 7

17.6.1 Beta load - IWS070BF

- Local Number Portability (LNP) subscribers have the ability retain directory numbers (DNs) while moving to other geographic locations and operators may need to check to see if a DN (calling, called, or special) is ported. The following functions, located in the functions menu, help to determine the portability status of a DN:

  — LNP Info Called

  — LNP Info Calling

  — LNP Info Special

  These functions provide a means for the operator to verify the LNP status of a directory number (DN). If a DN is ported, it is assigned to a local routing number (LRN) which the operator uses to determine how to route the call. After an operator requests LNP information on a formatted DN, the DMS switch provides LNP status information for the specified DN. The LNP information is displayed in the country name field (field 27) of the call details window and consists of a label combined with a portability status. The following seven-character labels are located in the OACALLD.LNG file:

  CLDLNP: **string ID 0068**

  CLGLNP: **string ID 0069**

  SPLLNP: **string ID 0070**

  The portability status displays consist of a 12-character string of the actual local routing number (LRN), the text “not ported” which indicates the DN is not ported, or a question mark to indicate unknown portability status of the DN. The following portability status text string is also located in the OACALLD.LNG file:

  not ported **string ID 0071**

  A clock icon is displayed in the message status area (MSA) when an LNP query progress as well as other database queries. This symbol informs the operator to wait before proceeding with any keying. While the query-in-progress clock icon is visible, the DMS switch limits the operations that the operator can perform.

- The branding for TOPS by service provider identifier (SPID) feature allows the operator to brand a call that originates from an operating company other than the one at which the operator works. The feature provides the originating party’s account owner SPID. The calling information field 8 displays the actual local service

provider of the subscriber. Prior the SPID feature, the trunk group, which is labeled by the name of an operating company, provided the only means to brand a call. With release of the SPID feature, the field is used for both SPID and trunk group displays.

- To prevent both displays from being sent to the position, office parameter OPP_ALWAYS_SEND_SPID_INFO is created. For IWS positions, the default setting is N(o), so the DMS switch sends only one display (either trunk group or SPID) to the position. If OPP_ALWAYS_SEND_SPID_INFO is set to Y(es), the operator may see a flash on the screen as the trunk group is overwritten by the SPID.
- The SPID/trunk group displays appear in the OA screen at call arrival. In an automatic number identification failure (ANIF), the call is presented without the SPID. Enter the calling number, and activate the call details function to display the SPID. If the SPID information appears, the IWS position only guarantees to display eight X-width characters. The exact character combination determines if the entire SPID name is displayed. If the chosen name fails to fit in the field, abbreviate the name or use a mix of upper- and lower-case letters in the CM datafill. The trunk group text is obtained from the IWS table XTGDSPL.TBL.
- Removed references to MPXPROF since profiling is accessed from RAMP.
- Changed MPXLOGS references to RAMP since the log tracing tool is accessed from RAMP.
- Colorblind support functionality is provided for colorblind and partially colorblind operators. The IWS BaseHMI application provides a new colorblind mode toggle softkey in the assigned activities window. For more information on this new colorblind softkey, reference the *TOPS IWS Base HMI Application Guide*. When the position is not in colorblind mode, the OA application displays appear as they did prior to IWS release 07. When the position is in the colorblind mode, some displays change to appear more recognizable to a colorblind or partially colorblind operator. Colorblind mode affects IWS displays as follows:
  - — Error and alert text in the Clg, Cld, Spl, IC, and Misc data entry fields flash. Error text flashes at a fast rate. Alert text flashes at a slow rate.
  - — The user can change datafill file MPXPARM.INI to define colorblind normal, error, and alert text colors. For more information on setting the colorblind text colors, reference the *TOPS IWS RAMP and Provisioning User's Guide* and the *TOPS IWS Base Platform User's Guide.*
  - — The person paid icon in the calling, called, and special icon fields is white instead yellow.
  - — The station paid icon in the calling, called, and special icon fields is white instead of yellow.
  - — The auto collect icon in the called icon field is grey instead of cyan.

- The user can enable text flashing without enabling the colorblind mode. The flashing and colorblind support capabilities are selected by changing IWS datafill. See the *TOPS IWS RAMP and Provisioning User's Guide* and the *TOPS IWS Base HMI Application Guide* for more information on IWS colorblind support and text flashing.
- Eliminated all README files.

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DMS-100 Family

TOPS IWS

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