297-2251-012

DMS-100 Family

# TOPS IWS

## OIA Application Guide

IWS release 17.1 Standard 17.02 June 2003

NORTEL NETWORKS™

DMS-100 Family

# TOPS IWS

## OIA Application Guide

Publication number: 297-2251-012
Product release: IWSS0171
Document release: Standard 17.02
Date: June 2003

**Limitation of liability:** Neither Nortel Networks nor any of its agents or suppliers shall be liable for any indirect, consequential, incidental, or exemplary damages, or economic losses (including damages for loss of business profits, business interruption, loss of business information and the like), arising from the use, inability to use, or performance of the software or this license agreement, even if Nortel Networks or such agent or supplier has been advised of the possibility of such damages and/or losses, and whether any such damage and/or loss arises out of contract (including fundamental breach), tort (including negligence), or otherwise. The entire liability of Nortel Networks for any claim or loss, damage or expense from any cause whatsoever, whether arising out of contract (including fundamental breach), tort (including negligence), or otherwise shall in no event exceed the price paid by you under this license agreement. In some jurisdictions you may have additional rights, in which case some of the above may not apply to you.

# Publication history

**June 2003**

Document version.issue 17.02
Standard release for IWS 17.1
(G3 release)

**April 2003**

Document version.issue 17.01
Preliminary release for IWS 17.1
(G2 release)

**November 2002**

Document version.issue 16.01
Preliminary release for IWS 17.0
(G2 release)

**September 2001**

Document version.issue 15.01
Standard release for IWS 15.2
(G3 release)

**August 2001**

Document version.issue 15.01
Preliminary release for IWS 15.2
(G2 release)

**June 2001**

Document version.issue 14.02
Standard release for load IWS 15.0 FU
(G3 CD release)

**April 2001**

Document version.issue 14.01
Preliminary release for load IWS 15.0 FU
(G2 release)

**September 2000**

Document version.issue 13.03
Standard release for load IWS 14.0 CC
(G3 release)

**September 2000**

Document version.issue 13.02
Standard release for load IWS 14.0 CC
(G2 release)

**September 2000**

Document version.issue 13.01
Standard release for load IWS 14.0 BQ
(G2 CD release)

**June 2000**

Document version.issue 12.03
Standard release for load IWS 13.0 HP
(G3 release)

**March 2000**

Document version.issue 12.02
Standard release for load IWS 13.0 GJ
(G2 release)

**March 2000**

Document version.issue 12.01
Standard release for load IWS 13.0 FR
(G2 CD release)

**August 1999**

Document version.issue 11.02
Standard release for load IWS 12.0 AL
(G2 release)

**August 1999**

Version 11.01 Standard release for load IWS120AK
(G2 CD release)

**May 1999**

Version 10.04 Standard release for load IWS110BV
(G3 release)

**March 1999**

Version 10.03 Standard release for load IWS110BU
(G2 release)

**March 1999**

Version 10.02 Standard release for load IWS110BS
(G2 CD release)

**November 1998**

Version 10.01 Preliminary release for load IWS110BG
(G1A release)

**November 1998**

Version 09.05 Standard release for load IWS100BC
(G3 release)

**November 1998**

Version 09.04 Standard release for load IWS100BB
(G3 CD release)

**August 1998**

Version 09.03 Standard release for load IWS100BB
(G2 release)

**August 1998**

Version 09.02 Standard release for load IWS100BA
(G2 CD release)

**June 1998**

Version 08.04 Standard release for load IWS090BB
(G3 release)

**May 1998**

Version 09.01 Preliminary release for load IWS100AL
(G1A release)

**April 1998**

Version 08.03 Standard release for load IWS090AZ
(G2 SMA release)

**March 1998**

Version 08.02 Standard release for load IWS090AY
(G2 CD release)

**January 1998**

Version 07.04 Standard release for load IWS080AW
(G2 SMA release)

**December 1997**

Version 08.01 Preliminary release for load IWS090AN
(G1A SMA release)

**December 1997**

Version 07.03 Standard release for load IWS080AV
(G2 SMA release)

**December 1997**

Version 07.02 Standard release for load IWS080AS
(G2 CD release)

**October 1997**

Version 07.01 Preliminary release for load IWS080AO
(G1A SMA release)

**July 1997**

Version 06.03 Standard release for load IWS070BW
(G2 SMA release)

**June 1997**

Version 06.02 Standard release for load IWS070BS
(G2 CD release)

**April 1997**

Version 06.01 Preliminary release for load IWS070BF
(SMA release)

**January 1997**

Version 05.07 Standard release for load IWS060BD
(G2A SMA release)

**December 1996**

Version 05.06 Standard release for load IWS060BC
(G2A SMA release)

**November 1996**

Version 05.05 Standard release for load IWS060BB
(G2A CD release)

**October 1996**

Version 05.04 Standard release for load IWS060BB
(SMA release)

**September 1996**

Version 05.03 Standard release for load IWS060BA
(G2 SMA release)

**September 1996**

Version 05.02 Standard release for IWSS006
(G2 CD release)

**July 1996**

Version 05.01 Preliminary release for IWSS006
(G1A SMA release)

# 1.0 Overview

The OIA application on the IWS position is optional software supporting application-level communication between the IWS position and an external database implementing the OIA generic protocol (OIAGPROT) specification. (Refer to the *Open Information Access Generic Protocol Specification*, NIS Q212-3.) The protocol provides the external database with the ability to accept input from the operator and, in turn, display resulting output to the operator by manipulating the softkeys and some of the windows on the position screen. The OIA windows locations and sizes are predefined by the IWS OIA application.

The IWS OIA application is compliant with the OIAGPROT specification; however, the IWS OIA application does not implement the application check and application OK messages of the OIAGPROT specification.

Communication with the database is defined as a "session." A session describes the period of communication with the database that occurs once the operator has logged on to the database. Initiating and terminating OIA sessions on the IWS position are described later in this document. The ability to accept input and display output is provided by the external database within the confines of a session. Further discussion of sessions is provided in section 5.0 on page 39.

The OIAGPROT specification also defines out-of-session messages that are used by the IWS position and the database for logon, logoff, and displaying informational status messages.

The IWS OIA application uses Microsoft Windows, which provides the message parsing, screen update, input handling, and entry and exit procedures that are necessary for operator interaction with the external database.

The IWS OIA application is fully compliant with the TOPS IWS application programmer's interface (API); however, this application does not provide a service in the DMS context. The OIA application uses the keyboard datafill supplied by the IWS base software and is fully compliant with the keyboard API supplied with the IWS.

The IWS OIA application is also fully compliant with the IWS color strategy. The OIA windows change colors when the operator selects new colors from the assigned activities screen. OIA text displays adjust according to the current IWS colorblind mode setting. For additional discussion on IWS OIA colorblind strategy, see section 2.1.2 on page 21. For information concerning the method for changing screen colors and for changing the colorblind mode, refer to *TOPS IWS Base HMI Application Guide,* 297-2251-013.

The Nortel Networks integrated Reference and Rater System and the Computer Generation, Inc. (CGI) Operator Reference Database (ORDB) are representative of the external databases implementing the OIAGPROT specification and interacting with the IWS OIA application. The external database gives the operator access to various types of reference data. Depending on the database vendor, an OIA-compliant database typically provides values such as emergency number information, rate and route information, phraseology, and city name to numbering plan area (NPA) translations.

## 1.1 OIA in TOPS IWS

The OIA application is one component in the open Traffic Operator Position System Intelligent Workstation Subsystem (TOPS IWS). As of IWS Release 17.1, two types of IWS position configurations are supported, TDM positions and IP positions. Figure 1 provides an overview of the TOPS IWS network topology with OIA using the TDM position configuration. Figure 2 provides an overview of the TOPS IWS network topology with OIA using the IP position configuration. For more information on IWS position configuration, see the *TOPS IWS Base Platform User's Guide*, 297-2251-010.

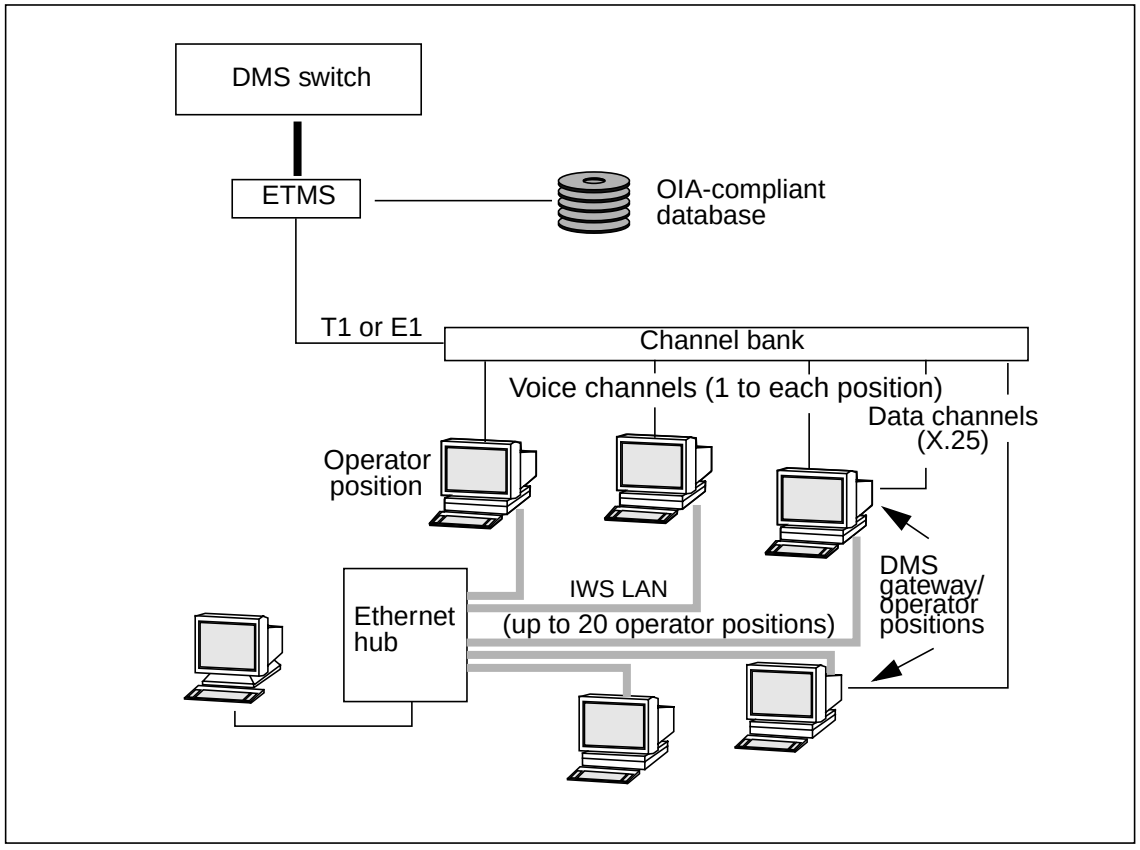


**FIGURE 1. TOPS IWS network topology with OIA using the TDM position configuration**

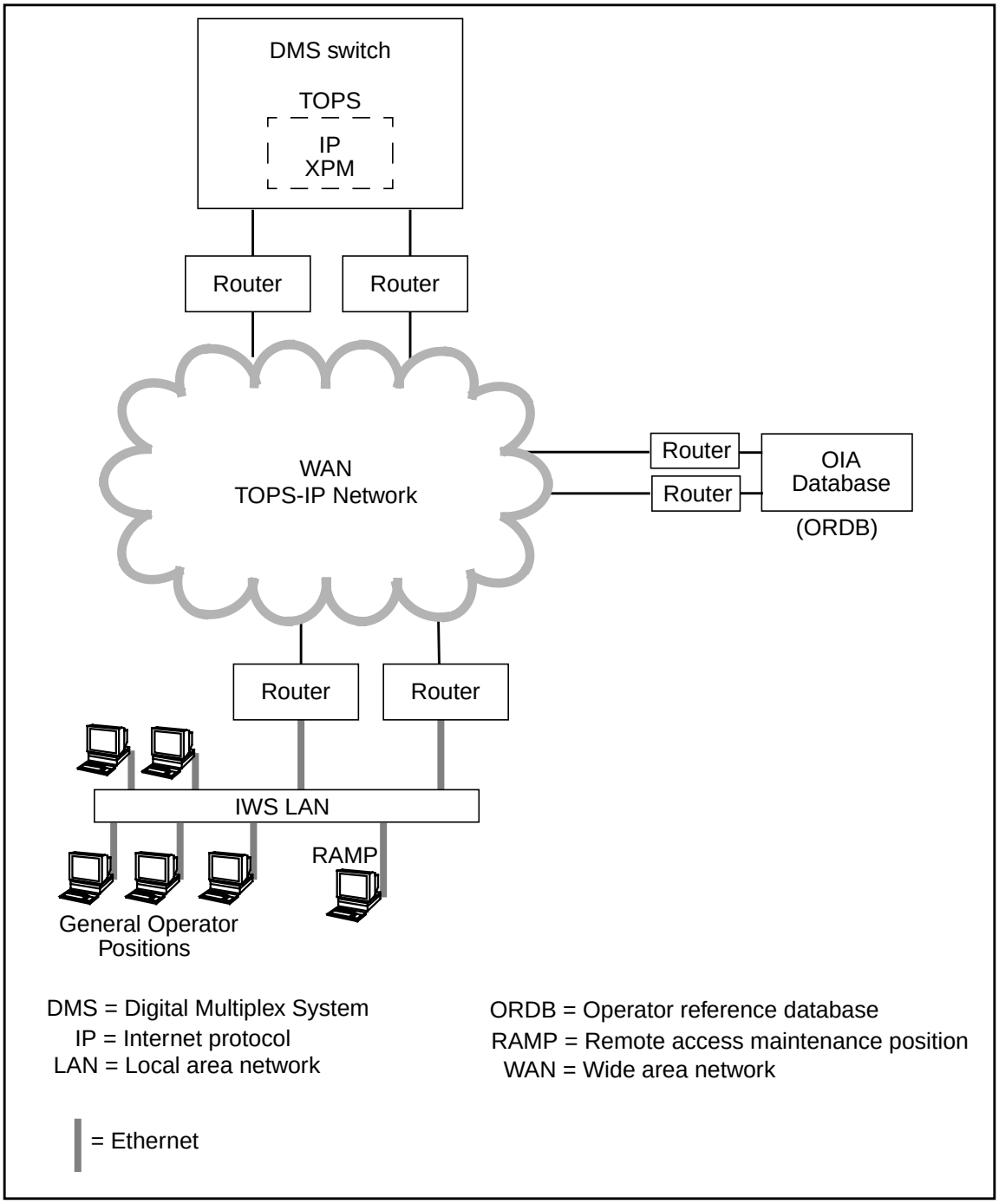


**FIGURE 2. TOPS IWS network topology with OIA using the IP position configuration**

Figure 3 provides an overview of the TOPS IWS software architecture. The WX25 and MPXMTCGW applications apply to TDM Gateway positions only.

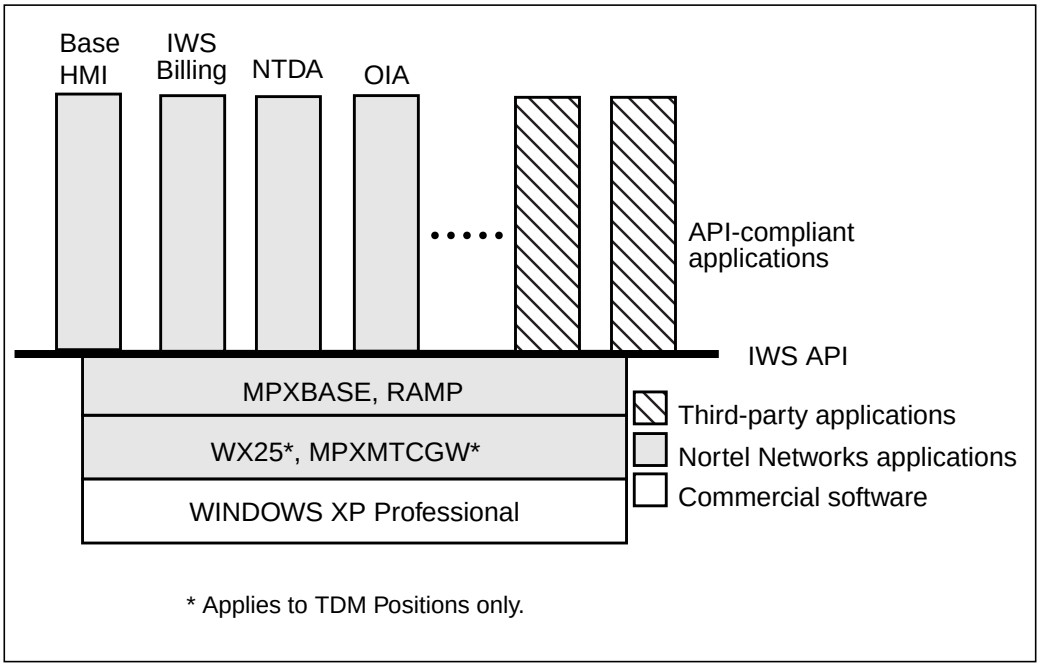


**FIGURE 3. IWS base software architecture**

# 2.0 IWS OIA windows

The IWS OIA application displays seven windows in the application area of the IWS screen. Five of these windows can be manipulated by the external database using the OIA generic protocol (OIAGPROT); however, the call information and call headlines windows are manipulated by the DMS switch using the open position protocol (OPP).

***Note:*** The use of a mouse with the OIA application is not recommended. Whether the mouse is disabled or not, however, you should be aware of the following two special circumstances:

- Clicking the mouse in certain areas causes the active window to gray out and lose focus. Softkeys do not respond, and any keyboard keystrokes associated with the window may be inactivated. To regain focus, move the cursor over the window where you were working and click the mouse.
- You should also be aware that it is possible to use the mouse to cut and paste.

## 2.1 DMS-driven windows

The OIA call information and call headlines windows are manipulated by the open position protocol (OPP).

The OIA call information window is the sixth window provided by the IWS OIA application. The information displayed in the OIA call information window is maintained entirely by the OIA application software and does not come from the database. The OIA call information window is used by the OIA application to display call information that is received from the DMS switch.

The OIA call headlines window is the seventh window provided by the IWS OIA application. Additional information displays here to reduce the need for the operator to toggle between the billing application and the OIA application.

IWS OIA also uses the MSA of the IWS screen. Data from the external database is displayed in application fields I, II, and III in the MSA. The IWS OIA application uses application field IV to display the OIA clock icon when necessary.

### 2.1.1 Call headlines window

The OIA call headlines window displays across the screen, just under the message/status area (MSA), as shown in figure 4. If the OIA application has focus, the window displays even when no call is present. The OIA call headlines window contains two fields, one to display service provider identification (SPID)/trunk group and the other to display originating line number screening (OLNS) alphanumeric information.

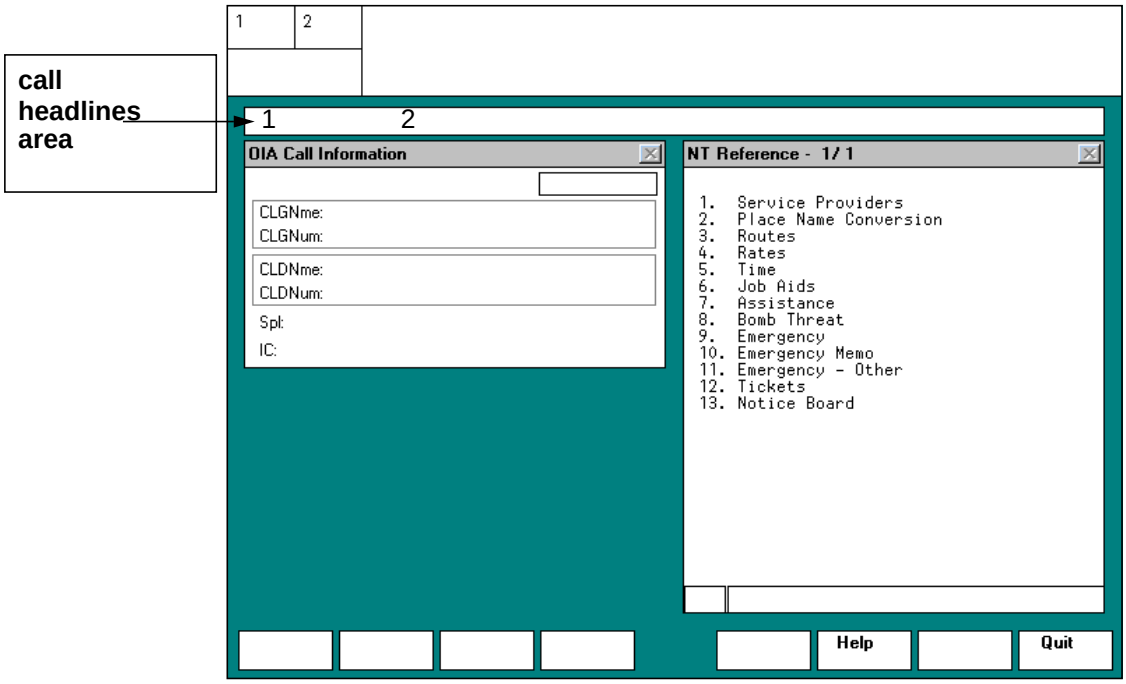


**FIGURE 4. OIA call headline window**

### 2.1.1.1 SPID/trunk group display: field 1

The incoming trunk group or service provider identification (SPID) of the call is displayed in field 1 of the OIA call headlines window. If both the SPID and the trunk group are sent to the IWS position, the display in the OIA call headlines window appears based on the priority datafilled in file MPXPARM.INI. The service provider can choose to give priority to either the trunk group or the SPID. Use the provisioning tool, discussed in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, to datafill file MPXPARM.INI.

The SPID is displayed in call headlines only if it comes from the DMS switch. SPID data from the external database is ignored in the call headlines display.

The text displayed in the trunk group/SPID field is supplied through the IWS display library and contains up to eight characters. More information on the IWS display library trunk group/SPID string can be found in *TOPS IWS Base HMI Application Guide*, 297-2251-013. The IWS display library obtains text strings for the trunk group from IWS file XTGDSPL.TBL. The SPID display text is received from the DMS switch. Refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010, for a description of file XTGDSPL.TBL.

#### 2.1.1.2 OLNS display: field 2

The OLNS display appears in field 2 of the OIA call headlines window. The service provider uses OLNS to provide additional information about the calling DN; for example, the location of a calling station. The label, which is datafilled in file OIACIW.LNG, can be up to four characters, and the text string can be up to eight characters. The string length totals 13 characters (including one space). The following label is displayed in this field.

| | |
|---|---|
| `Txt:` | string ID 0008 |

### 2.1.2 OIA call information window

The OIA call information window displays on the upper left half of the screen to provide call-related information for the operator whenever the OIA application becomes the active application at the position. The window displays even when no call is present. The OIA application software displays the OIA call information window whenever OIA becomes the active application at the IWS position. When OIA loses focus, the window is removed from the screen.

In the discussion that follows, each field of the call information area is discussed in terms of the text that may be displayed in it. String IDs identify the text strings that are displayed as field labels and informational messages in each field. Both the identifying label and the text string for each field can be changed in the associated language file. Note that string lengths (where variable width pitched fonts are used) are determined based on average “X” width character sizes. Some call information fields have a corresponding field label. The text strings discussed here are taken from the OIA file OIACIW.LNG, where each string is identified by a string ID. The only exception is the service/type field, which also takes its text from IWS files XSERVS.TBL and XCLLORIG.TBL.

Figure 5 shows the location of the call information window and each call information field on the IWS screen.

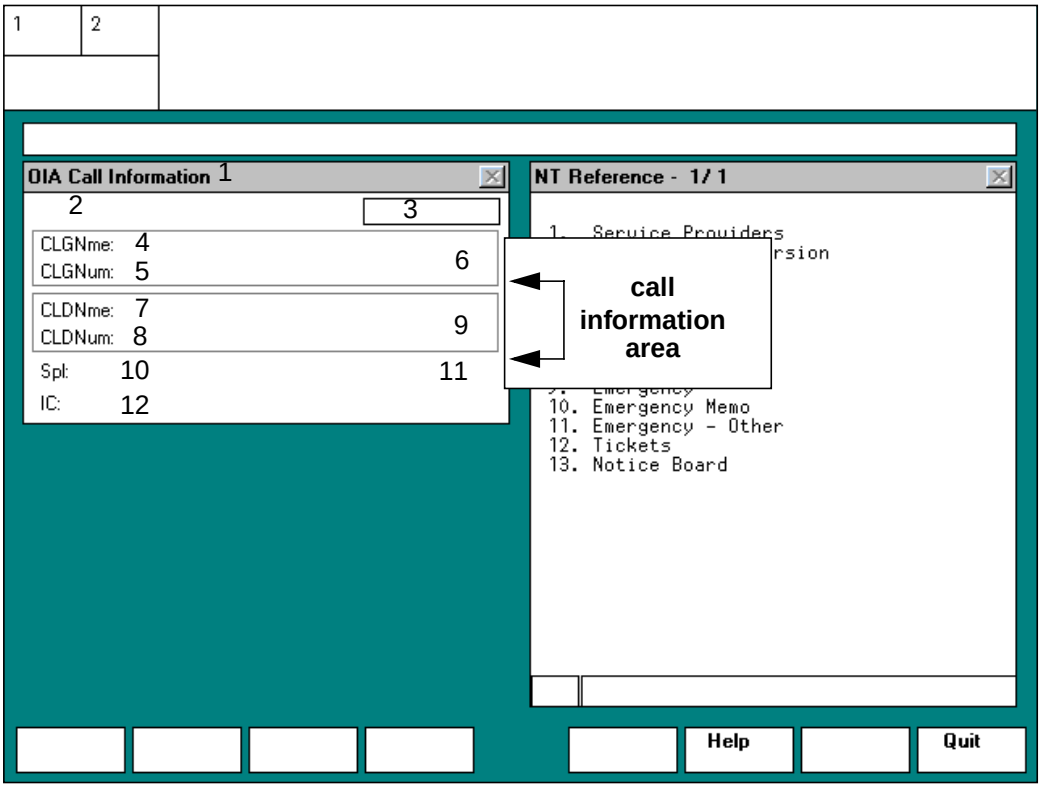


**FIGURE 5. OIA call information window**

The OIA call information window displays the calling name, number, and station class; called name, number and station class; special number and station class; service type; call type; ticket number; and any inter-LATA carrier (IC) information that applies. All this information is read-only.

The OIA call information window is compliant with IWS colorblind support. When the position is in non-colorblind mode, text appears in standard IWS text colors. When the position is in colorblind mode, text appears in the colorblind text colors datafilled in file MPXPARM.INI. Colorblind mode also makes error and alert text flash. Error text flashes at a fast rate, and alert text flashes at a slow rate. The user can enable text flashing for the non-colorblind mode by changing IWS datafill. For more information concerning IWS colorblind support and text flashing, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013, *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, and *TOPS IWS Base Platform User's Guide*, 297-2251-010.

The class charge information is also displayed in the OIA call information window. Depending on the particular class charge that applies to the call, an icon is displayed in either the calling class charge field, called class charge field, or special class charge field. These icons are discussed in greater detail in later sections of this document.

The following sections discuss the details of each field.

#### 2.1.2.1 OIA call information window title: field 1

Field 1 displays the title for the OIA call information window. This string can be a maximum of 40 characters. Text in this field is displayed in the MS Windows System font. The following text string is displayed in this field.

| | |
|---|---|
| `OIA Call Information` | string ID 0000 |

#### 2.1.2.2 Service/type: field 2

Field 2 displays the service, call type, and calling station class information. This field contains a maximum of 27 characters.

Service information comes from IWS file XSERVS.TBL and can be up to six characters. The call type information comes from IWS file XCLLORIG.TBL and can be up to ten characters. Refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010, for a description of files XSERVS.TBL and XCLLORIG.TBL.

Calling station class information comes from file OIACIW.LNG and can be up to eight characters. File OIACIW.LNG is discussed in the "Data schema" chapter and datafilled with the provisioning tool, which is discussed in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015. The following text strings are displayed in this field for the calling station class information.

| | |
|---|---|
| `Coin Pre` | string ID 0001 (prepay coin) |
| `Coin Po` | string ID 0002 (postpay coin) |
| `Hotel` | string ID 0003 (hotel) |
| `Inst` | string ID 0004 (institution) |

#### 2.1.2.3 Ticket: field 3

Field 3 displays the ticket number. This field contains up to 11 characters in the following format: `AAADDXXXXXX`, where

| | |
|---|---|
| `AAA` | is alpha characters representing the transit code (such as PAR) |
| `DD` | represents the day, from 01 to 31 |
| `XXXXXX` | is numeric characters from 1 to 999999 |

If the ticket number is marked as invalid by the DMS switch, the whole string is displayed in error text color.

### 2.1.2.4 Calling name: field 4

Field 4 displays the label that identifies the calling name field, and the name of the calling party. The label can be as long as seven characters in the following text string:

`CLGNme:` string ID 0006

The calling party name can be as long as 32 characters. The data for the calling name field is obtained from the DMS switch.

### 2.1.2.5 Calling number: field 5

Field 5 displays the label that identifies the calling number field, and the number of the calling party. The label can be as long as seven characters in the following text string:

`CLGNum:` string ID 0007

The calling party number can be as long as 27 characters, including digits and formatting characters. The data for the calling number field comes from the DMS switch.

### 2.1.2.6 Calling icons: field 6

Field 6 is the calling icon field. Table 1 provides a picture and an explanation of each icon that may appear in the field.

**TABLE 1. Calling icons**

| Icon name | Icon | Color | Meaning |
|---|---|---|---|
| person |  | yellow | person paid in non-colorblind mode |
| person |  | white | person paid in colorblind mode |
| station |  | yellow | station paid in non-colorblind mode |
| station |  | white | station paid in colorblind mode |
| up arrow |  | red | invalid billing (appears with red “X” in called class charge field and down arrow in special class charge field) or missing billing (appears with red “?” in called class charge field and down arrow in special class charge field) |

### 2.1.2.7 Called name: field 7

Field 7 displays the label that identifies the called name field, and the name of the called party. The label can be as long as seven characters in the following text string:

`CLDNme:` string ID 0009

The called party name can be as long as 32 characters. The data for the called name field is obtained from the DMS switch.

### 2.1.2.8 Called number: field 8

Field 8 displays the label that identifies the calling number field, and the number of the calling party. The label can be as long as seven characters in the following text string:

`CLDNum:` string ID 0010

The calling party number can be as long as 27 characters, including digits and formatting characters. The data for the calling number field comes from the DMS switch.

### 2.1.2.9 Called icons: field 9

Field 9 is the called icon field. Table 2 provides a picture and an explanation of each icon that may appear in the field.

**TABLE 2. Called icons**

| Icon Name | Icon | Color | Meaning |
|---|---|---|---|
| person |  | yellow | person collect in non-colorblind mode |
| person |  | white | person collect in colorblind mode |
| autocollect |  | cyan | called party automatically accepts billing (800 services) in non-colorblind mode |
| autocollect |  | dark grey | called party automatically accepts billing (800 services) in colorblind mode |
| station |  | yellow | station collect in non-colorblind mode |
| station |  | white | station collect in colorblind mode |
| X |  | red | invalid billing (appears with up arrow in calling icon field and down arrow in special icon field) |
| question mark |  | red | missing billing (appears with up arrow in calling icon field and down arrow in special icon field) |

### 2.1.2.10 Special number: field 10

Field 10 displays the label that identifies the special number field, and the special number. The special number label can be as long as four characters in the following text string:

`Spl:` string ID 0011

The special number can be as long as 27 characters, including alphanumeric and formatting characters. The data for entry into the special field comes from the DMS switch.

### 2.1.2.11 Special icons: field 11

Field 11 is the special icon field. Table 3 provides a picture and an explanation of each icon that may appear in the field.

**TABLE 3. Special icons**

| Icon name | Icon | Color | Meaning |
|---|---|---|---|
| calling (person) |  | yellow | special calling in non-colorblind mode |
| calling (person) |  | white | special calling in colorblind mode |
| calling (station) |  | yellow | special calling in non-colorblind mode |
| calling (station) |  | white | station special calling in colorblind mode |
| up arrow |  | black | special called (appears with yellow person or phone) in called field |
| down arrow |  | red | invalid billing (appears with red up arrow in calling icon field and red “X” in called icon field) or missing billing (appears with red up arrow in calling icon field and red “?” in called icon field) |

### 2.1.2.12 Inter-LATA carrier field: field 12

Field 12 displays the label that identifies the IC, and the name, number, or both, of the inter-LATA carrier. The label for the field can be as long as four characters in the following text string:

`IC` string ID 0005

The entry for the IC field can be as long as 13 characters.

## 2.2 Database-driven windows

Using the OIAGPROT, the external database can open, update, clear, and close the five windows shown below:

- menu/list window
- form input window
- bottom width window
- block input window
- status window

The first four windows can by manipulated only during a session. The status window is called a “window” because, like the first four, it conveys specific information in a specified area of the screen. In reality, the two fields that comprise the status “window” can be placed apart from each other.

### 2.2.1 Menu/list window

The menu/list window is displayed on the right half of the application area on the IWS screen. This window contains a three-character input field and a 40-character input field across the bottom. The operator uses the menu/list window primarily for menu command selection. It is also used to display any output that fits into the space, such as “Help” information or default ticket information from the external database.

Figure 6 shows the location of the menu/list window. Text for the window’s title and page areas varies based on what external database is connected to the OIA application.

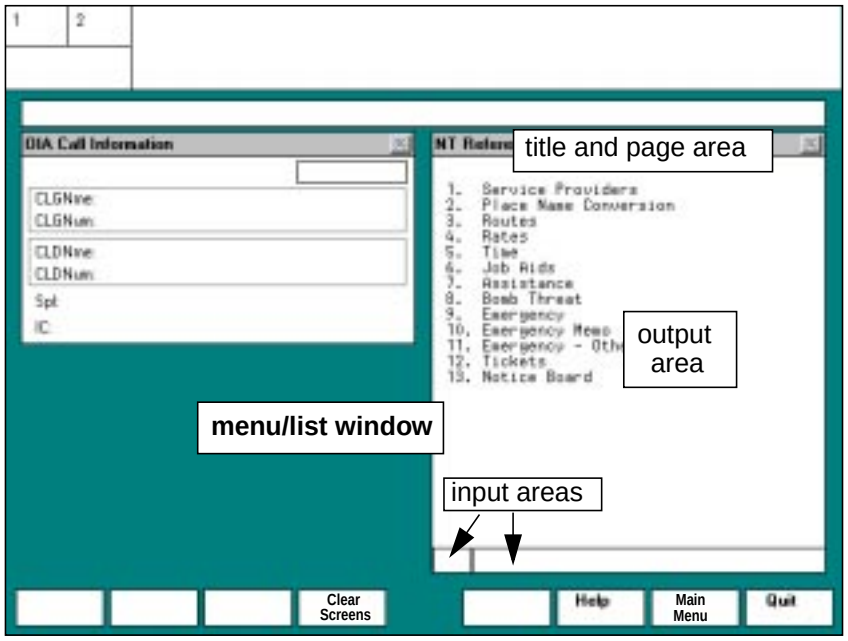


**FIGURE 6. Menu/list window**

#### 2.2.1.1 Menu/list window title and page areas

Figure 6 shows the menu/list window title and page areas. The information in the title bar comes from the external database. This information is not viewed as two separate fields by the operator, but the two areas of information are separated by a hyphen.

The title area in the title bar contains up to 30 characters, and the page area contains up to six characters. Input of more than the allotted number of characters is truncated.

#### 2.2.1.2 Menu/list window output area

The output area can have as many as 18 rows of characters, with up to 40 characters in each row.

### 2.2.1.3 Menu/list input areas

Two input areas are provided in the menu/list window. Both are located along the bottom of the window, as shown in figure 6. One input area allows input of up to three characters, and the other allows input of up to 40 characters. If a Computer Generation Incorporated (CGI) database is in use, experienced operators can use this area to string commands together (in macro fashion), each command being delimited by a "/." The external CGI database is responsible for parsing the string of commands.

## 2.2.2 Form input window

The form input window is displayed on the lower left portion of the screen. The OIA call information window remains visible so the information can be used by the operator for database processing. The form input window is divided into two areas, a six-line output area on the left and a six-line input area on the right. This window also contains another input line across the bottom The form input window is typically used for field-oriented input; that is, the database prompts the operator for input based on text displayed in the output area.

Figure 7 shows the form input window. Text for the window's title and page areas varies based on what external database is connected to the OIA application.

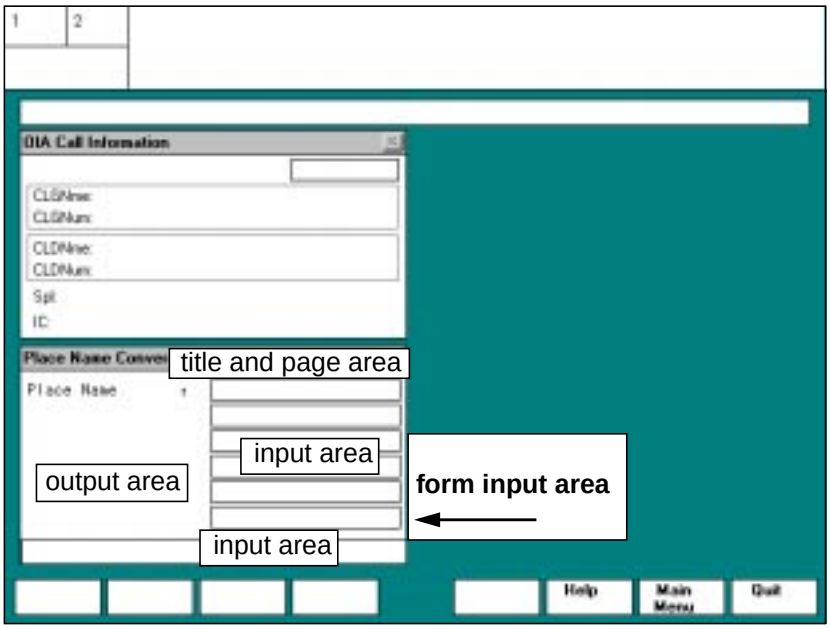


**FIGURE 7. Form input window**

### 2.2.2.1 Form input window title and page areas

Figure 7 shows the form input window title and page areas, which appear in the title bar of the window. The two pieces of information come from the external database, and are separated by a hyphen.

The title area in the title bar contains up to 30 characters, and the page area contains up to six characters. Input of more than the allotted number of characters is truncated.

#### 2.2.2.2 Form input window output area

Figure 7 shows the form input window output area. This area can have as many as six rows of characters, with up to 20 characters in each row.

#### 2.2.2.3 Form input window input areas

Two input areas are provided in the form input window. The first, in the body of the window, allows for six rows of input and up to 20 characters in each row. The second input area is along the bottom of the window and contains up to 40 characters. If a CGI database is in use, experienced operators can use this area to string commands together (in macro fashion), each command being delimited by a "/." The external CGI database is responsible for parsing the string of commands.

### 2.2.3 Bottom width window

The bottom width window is displayed across the full width of the bottom of the screen. The OIA call information window remains visible so the information can be used by the operator for database processing. This window contains a three-character input field and a 40-character input line across the bottom of the window. The operator can use the bottom width window to enter data requiring a wide format.

Figure 8 shows the bottom width window. Text for the window's title and page areas varies based on what external database is connected to the OIA application.

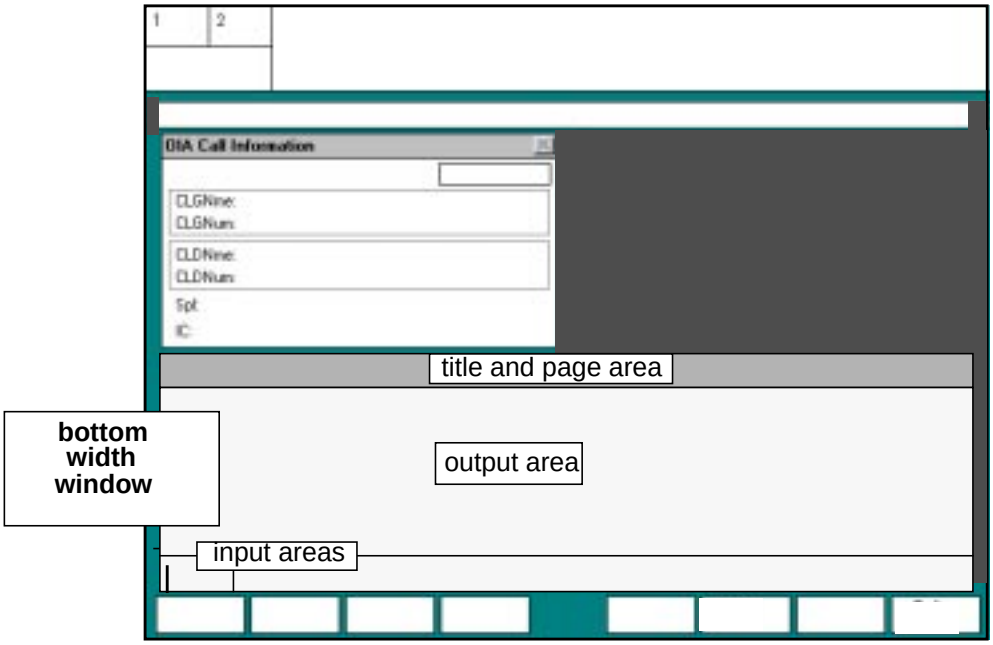


**FIGURE 8. Bottom width window**

#### 2.2.3.1 Bottom width window title and page areas

Figure 8 shows the bottom width window title and page areas, which appear in the title bar of the window itself. The two pieces of information are separated by a hyphen.

The title area contains up to 30 characters. The page area contains up to six characters. Input of more than the allotted number of characters is truncated.

#### 2.2.3.2 Bottom width window output area

Figure 8 shows the bottom width window output area. The output area can have as many as six rows of characters, with up to 80 characters in each row.

#### 2.2.3.3 Bottom width window input areas

Two input areas are provided in the bottom width window. Both are located along the bottom of the window, as shown in Figure 8. One input area allows input of up to three characters, and the other allows input of up to 40 characters. If a CGI database is in use, experienced operators can use this area to string commands together (in macro fashion), each command being delimited by a "/." The external CGI database is responsible for parsing the string of commands.

### 2.2.4 Block input window

The block input window provides a large area for the operator who need to type large amounts of data. The block input window is displayed on the lower left portion of the screen. The OIA call information window remains visible so the information can be used by the operator for database processing. The window consists of six input lines, which cover the full width of the window. This window also contains an input line across the bottom.

Figure 8 shows the block input window. Text for the window's title and page areas varies based on what external database is connected to the OIA application.

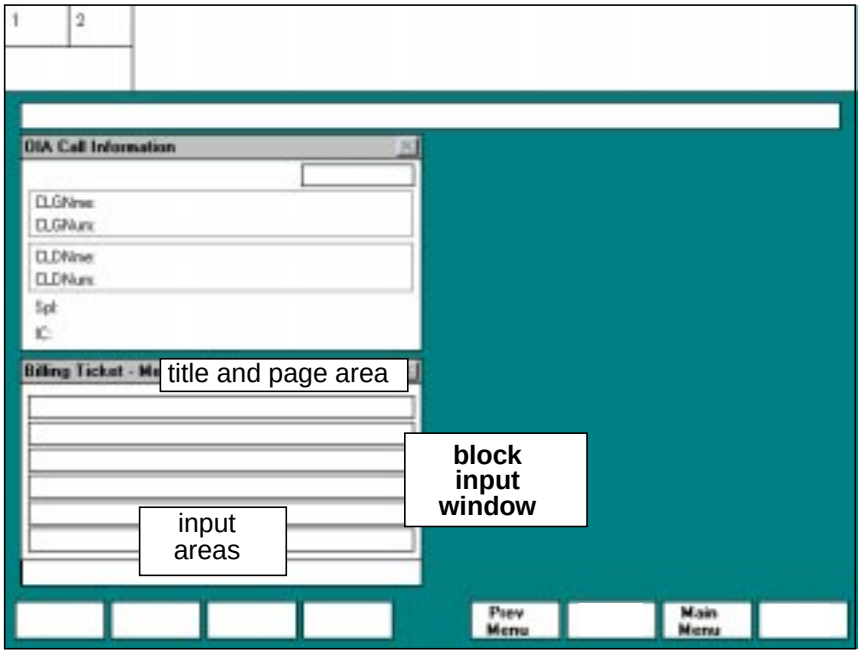


**FIGURE 9. Block input window**

### 2.2.4.1 Block input window title and page areas

The following diagram highlights the block input window title and page areas. This information appears in the title bar of the window itself. The two pieces of information come from the external database and are separated by a hyphen.

The title area contains up to 30 characters and the page area contains up to six characters. Input of more than the allotted number of characters is truncated.

### 2.2.4.2 Block input window input area

Figure 9 shows the two input areas in the block input window. The first is in the body of the window. It can have as many as six rows of input. with up to 40 characters in each row. The alternate input area, located along the bottom of the window, allows input or display of up to 40 characters. If a CGI database is in use, experienced operators can use this area to string commands together (in macro fashion), each command being delimited by a "/." The external CGI database is responsible for parsing the string of commands.

### 2.2.5 Status window

The status window is composed of two separate fields that display certain error messages and other indications of the status of the external database. The position can place these two fields anywhere on the screen; however, the OIAGPROT defines them as one window. The first field can be a maximum of seven characters. The IWS position places it in application message III of the MSA. The second field can be a maximum of 35 characters. The IWS position uses both application message I and II fields of the MSA to

accommodate the second field. Up to 25 characters are displayed in application message I field and the remainder are displayed in application message II field.

## 2.3 MSA

The IWS OIA application uses six fields in the message status area. For complete details of the MSA layout, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

The OIA application displays certain call and system information in both the transient field and application message V field of the MSA, shown in figure 10. This information is displayed momentarily, then removed from the screen. The information displayed in this field comes from the DMS switch or the OIA application instead of the external database.

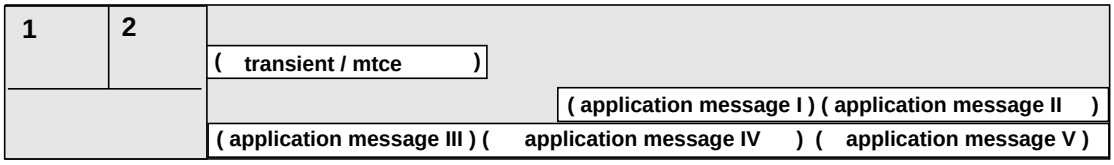


**FIGURE 10. Message/status area**

The OIA clock displays in application message IV to inform the operator that a query to the external database is outstanding. No operator input is allowed while the clock displays.

Application message IV can also display the No Automation icon to indicate that the call cannot be handed off to an automated service. The DMS switch controls the No Automation icon.

# 3.0 IWS menus

The following six IWS system menus can be accessed by the operator while in an OIA session. These menus are not under the control of the external database. They are part of the IWS system platform.

- functions
- services
- applications
- trouble
- outtrunks
- CT4Q

The operator presses the corresponding menu key to access each of these menus. In addition, hot keys are supported for each menu. For details on the menu windows, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013. For information on menu hot keys, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

# 4.0 OIA keys

This section describes the softkeys and the hard keys on the IWS keyboard that are used with the OIA application.

## 4.1 Softkeys

All eight softkeys are controlled by the external database during a session. At session begin, the softkey labels are blank, and the softkeys do not work. The database labels each softkey throughout the session as appropriate, depending on the current context of the session. Actual softkey labeling occurs using the HMI API. The softkeys can be labeled with up to 14 characters in two rows of seven each. The database associates an action with each softkey, to be performed when the database is notified that an operator has pressed the key. When the database causes a softkey label to be cleared, it must also clear the associated action.

***Note:*** Shifted softkeys are NOT supported by the OIA application.

Pressing a softkey during a session with the database causes both indication of the key press and any data entered in the currently active field to be sent to the database. It is the responsibility of the service provider to declare an order of precedence for processing (that is, data versus key press).

All eight softkeys return to their previous settings when the session with the database is completed, or when the operator has suspended the database session to work on another task. OIA session suspension is discussed later in this document.

## 4.2 Paging keys

The OIA protocol provides a capability to change pages in the menu/list, form input, bottom width, and block input windows. The external database can be set up to designate any or all of these windows as multi-page windows depending on the type of information that is displayed. It is the responsibility of the particular external database to provide some indication of single or multi-paged windows in the title bars of the windows themselves.

The operator uses the page forward and page backward keys to notify the database to manipulate the pages displayed. Pressing one of the page keys during a session with the database causes both an indication of the key press and the data entered in the currently active field to be sent to the database.

## 4.3 Data entry

The cursor can be positioned in a data entry field by one of two methods: at the direction of the external database, or through the local editing performed by the operator. When the cursor is positioned, it is always at the beginning of the input field. The first time that the operator presses a key that causes a character to be displayed in the field, all displayed data in the field is cleared and the new character is entered.

## 4.4 Local editing capabilities

In general, field editing is consistent with editing capabilities provided by the IWS Billing application. OIA-specific keys can be assigned to move among input fields in the OIA windows.

### 4.4.1 Tab

Pressing the **Tab** key moves the cursor to the beginning of the next line in a multi-line input field. When the operator presses **Tab**, the data in the field is unaffected.

### 4.4.2 Shift + Tab

Pressing the **Shift +Tab** keys moves the cursor to the beginning of the previous line in a multi-line input field. When the operator presses **Shift + Tab**, the data in the field is unaffected.

### 4.4.3 Enter

Pressing the **Enter** key clears to the end of the line and moves the cursor to the beginning of the next line.

### 4.4.4 Field

In the menu/list and bottom width windows, pressing the **Field** key causes the cursor to move from the three-character input area to the 40-character input area (both located across the bottom of the windows) and vice versa. Any data in the field that the cursor is moved into is cleared.

In the form input and block input windows, pressing the **Field** key causes the cursor to move from the input area in the middle of the window to the input line at the bottom of the window. It also works in the reverse manner. When the operator moves the cursor to the input line, any data in the line is cleared. However, when the cursor is moved to the input area within the window, the data is unaffected.

### 4.4.5 Reset

Pressing the **Reset** key automatically forces an active OIA session to terminate.

## 4.5 Configuring the OIA-specific keys

The field and reset key actions are used exclusively by the OIA application. To configure the field and reset keys, use KeyBind to assign the actions to a specific key. File XKBOARD.TBL contains key actions used by the OIA application that are both specific to OIA and generic to the IWS position. For a description of file XKBOARD.TBL, see *TOPS IWS Base Platform User's Guide*, 297-2251-010. An example of the KeyBind screen is shown in figure 11, and a discussion of KeyBind can be found in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015.

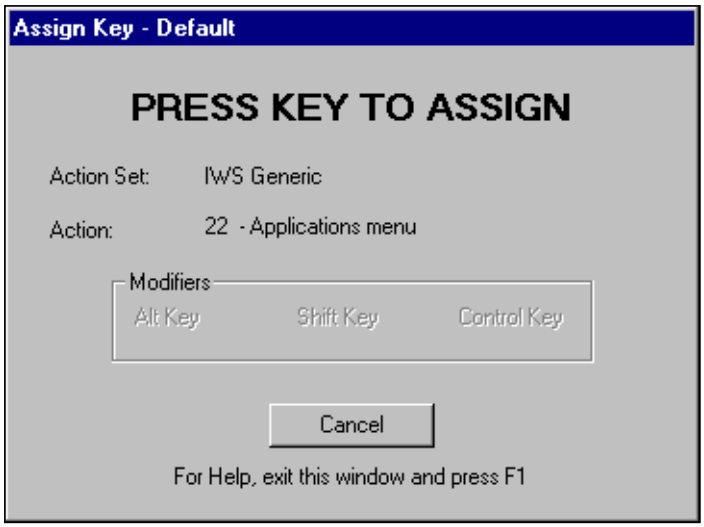


**FIGURE 11. KeyBind example**

# 5.0 Using the OIA application

This section describes how to use the OIA application, including how to log on and off; how to initiate, terminate, and suspend sessions; and how to transfer data.

## 5.1 OIA logon

The operator logs on to the external database during logon to the IWS position. For logon to the database to be successful, the operator ID and password (if required) entered at position logon must match those datafilled for the operator in the external database.

If the logon is unsuccessful, the message “No OIA” displays in the transient field of the MSA when the operator tries to access the OIA application through the applications menu. A log at the RAMP reports that there is no connection to the database.

## 5.2 OIA logoff

OIA logoff occurs when the operator logs off the IWS position. Logoff from the external database is also attempted if the position is forced busy from the maintenance and administration position (MAP).

## 5.3 Session initiation

A session with the external database can be initiated in three ways:

- manually—the operator uses the applications menu
- manually—the operator uses an applications menu hot key
- automatic session start—the DMS switch uses the open position protocol (OPP)

All these methods support the initiation of two different types of sessions: direct and indirect.

To allow manual session initiation by the operator using the applications menu or an applications menu hot key, the OIA application must be datafilled in IWS file XAPPL.TBL. Furthermore, the application that is currently active at the terminal must support, and act upon, the applications menu key and/or the applications menu hot key. Applications menu hot keys are datafilled in file XKBOARD.TBL and discussed in *TOPS IWS Base Platform User’s Guide*, 297-2251-010. Use KeyBind, discussed in *TOPS IWS RAMP and Provisioning User’s Guide*, 297-2251-015, to assign applications menu hot keys.

Refer to “XAPPL.TBL” on page 57 for a discussion of datafilling file XAPPL.TBL to provide access to the OIA application. The applications menu is accessed by pressing the **Appl** key. Pressing the **Appl** key once allows operator input without displaying the applications menu. Pressing the **Appl** key twice displays the applications menu and allows operator input. For more information about the applications menu and its use, refer to *TOPS IWS Base HMI Application Guide*, 297-2251-013.

***Note:*** If a session is initiated with the database and no call is present at the position, then the session is termed an administrative query. If a call arrives from the DMS switch with an automatic session start, then the administrative query session is terminated, and a new session is started.

In the case of an automatic session start, the DMS switch sends an OPP message to the IWS position to begin a direct session with the database. Automatic session start can be datafilled in DMS file CT4QNAMS. Datafill the appropriate menu number for direct initiation, and a number above the maximum (99) to go to the OIA main menu.

## 5.4 Direct initiation

Direct initiation to a session brings the operator directly to an OIA window such as the form, block, or bottom width. This method of session initiation is generally performed by an operator with extensive experience with the database. To allow direct initiation of a session, the OIA application listed in file XAPPL.TBL must be datafilled to allow extra data to be entered by the operator when the OIA application is selected from the applications menu.

An operator who is beginning a direct session with the database using the applications menu does so by pressing the following keys.

**Appl**, OIA application number, **Start**, OIA main menu entry number, **Start**

When the operator selects the OIA application number for a direct session start from the applications menu, the applications menu is displayed on the screen if it is not already displayed. The cursor is placed in the second data entry field to allow the operator to input the OIA main menu entry number. After the operator enters the OIA main menu entry number and presses the final **Start**, the windows of the currently active application are removed from the screen and the OIA windows are displayed as instructed by the external database.

An operator who is beginning a direct session with the database using an applications menu hot key does so by pressing the following keys.

applications menu hot key for OIA, OIA main menu entry number, **Start**

After pressing the applications menu hot key for OIA, the applications menu is displayed and the cursor is placed in the second data entry field to allow the operator to input the OIA main menu entry number. After the operator enters the OIA main menu entry number and presses **Start**, the windows of the currently active application are removed from the screen and the OIA windows are displayed as instructed by the external database.

## 5.5 Indirect initiation

Indirect initiation means that the operator is initially presented with the database's most high-level, or "main" menu. This method of session initiation is usually performed by novice operators who have not yet become familiar with the database's contents or how to access them most efficiently.

Datafill file XAPPL.TBL so that the OIA application does not allow extra data entry when the intent is to provide an option in the applications menu for an indirect initiation. However, an operator can perform an indirect session initiation even if file XAPPL.TBL is datafilled to allow extra data entry. The following examples of indirect session initiation assume that the OIA application has been datafilled not to allow extra data entry.

An operator who is beginning an indirect session using the applications menu does so by pressing the following keys.

**Appl**, OIA application number, **Start**

When **Start** is pressed in this keying sequence, the application windows of the currently active application are removed from the screen, and the OIA windows are displayed as instructed by the external database.

An operator who is beginning an indirect session using an applications menu hot key does so by pressing the following key:

applications menu hot key for OIA

When the hot key is pressed, the application windows of the currently active application are removed from the screen, and the OIA windows are displayed as instructed by the external database.

As stated previously, the examples above assume that the OIA application has been datafilled in file XAPPL.TBL not to allow extra data entry. This is the recommended datafill for providing an option in the applications menu for an indirect OIA session start. If, however, the OIA application is datafilled to allow extra data entry, an indirect session may still be started using this application menu option.

To start an indirect session when file XAPPL.TBL has been datafilled to allow extra data entry, select the option from the applications menu, or use the applications menu hot key. The applications menu is displayed with the cursor in the extra data field. An indirect session may then be started by pressing **Start** without entering any extra data. Key the following to initiate an indirect session using the applications menu.

**Appl**, OIA application number, **Start**, **Start**

Key the following to initiate an indirect session using the applications menu hot key.

applications menu hot key for OIA, **Start**

In the case of an automatic session start, the DMS switch sends an OPP message to the IWS position to begin an indirect session with the database. Automatic session start can be datafilled in DMS file CT4QNAMS. Datafill “100” (above the maximum of 99) to go to the OIA main menu to begin an indirect session.

## 5.6 Session termination

An OIA session can be terminated in three ways:

- termination that does not require permission from the database
- termination that requires permission from the database
- forced termination

Termination of an OIA session returns the operator to the screen from which the OIA session was begun.

### 5.6.1 Termination without permission

When a session is initiated, it has, by default, the characteristic that termination of the session may be allowed without the permission of the database. This is to allow for fast exit and for speedy return to normal operator activities. Thus, the operator's average work time (AWT) is not increased by waiting on acknowledgment of the session termination from the database.

### 5.6.2 Termination with permission

The OIA external database may, at any time during a session, notify the IWS position that permission to terminate the session must be granted by the database before actual termination of the session is allowed. This usually occurs as the result of some operation action that requires that another action be done before the termination of the session is allowed. For instance, in the case of CGI ORDB, if an operator has looked up an emergency number, the telephone company can require that the operator fill out an emergency ticket before the session can be terminated. Any normal attempts by the operator to terminate the session are denied until the specified requirement is fulfilled.

### 5.6.3 Forced termination

The operator also has the option of forcing the termination of the session. Forced termination overrides the qualification that requires permission from the database to terminate the session. The OIA external database is notified that the operator forced a session termination for the purposes of record-keeping.

## 5.7 Operator-initiated termination

The operator can force the termination of a session in eight different ways, which are described in the following sections.

### 5.7.1 Softkey with quit attribute

Pressing the **{Quit}** softkey (or any softkey with which the "quit" attribute is associated) causes session termination to be initiated. If permission to terminate is not required from the database, the session is automatically terminated. However, if permission is required,

the request for session termination is denied by the database and indication of further operator action that is necessary is supplied for the operator by the database.

### 5.7.2 Start with no input

The external database can specify whether or not pressing the **Start** key, when the active input area has no data associated with it, causes a session termination to be initiated. This ability is provided for each input area of each OIA window. Provision of this ability is in keeping with the general IWS Billing application menu philosophy stating that pressing the **Start** key in a menu when no data has been entered in its input field makes the menu close. If permission to terminate is not required from the database, the session is automatically terminated. However, if permission is required, the request for session termination is denied by the database and indication of further operator action that is necessary is supplied for the operator by the database.

### 5.7.3 Position release

Pressing the **Pos Rls** key causes session termination to be initiated. If permission to terminate is not required from the database, the session is automatically terminated. However, if permission is required, the request for session termination is denied by the database and indication of further operator action that is necessary is supplied for the operator by the database. Termination of the OIA session must be achieved before the notification for the operator's pressing the position release is sent to the DMS switch.

This also applies when the operator has suspended the current OIA session. If the operator has suspended the session, and the exit is denied by the database then part of the indication of this to the operator is that the operator is automatically placed back into the session with the database. A suspended session is described further in "Suspending an OIA session" on page 44.

### 5.7.4 Service switching

Switching services causes an automatic session termination. Service switching is initiated by the operator pressing the following key strokes:

**Svcs**, service number selection, **Start**

Service switching can also be initiated through the use of a services hot key. Service switching overrides a database requirement that permission for termination must be granted. This automatic exit occurs only when the service switch is allowed. The service switch can be performed within the context of a call, or may be the initiation of an administrative session with the service.

### 5.7.5 Initiation of another application session

Initiating an application session using the applications menu for a non-OIA application causes an automatic session termination. To initiate another application session, the operator presses the following key strokes:

**Appl**, application number selection, **Start**

An application session can also be initiated through the use of an application hot key. When another application session is initiated, it overrides a database requirement that permission for termination must be granted. This automatic exit occurs only when the application session initiation is allowed. The application session initiation can be performed within the context of a call, or may be the initiation of an administrative session with the application.

### 5.7.6 Context changing during OIA session

While in an OIA session, pressing a key that has been datafilled to cause a context change causes an automatic session termination. This overrides a database requirement that permission for termination must be granted. Following session termination, the context change key is then acted upon by the application from which the OIA session was begun.

### 5.7.7 Reset

If the **Reset** key is datafilled in file XKBOARD.TBL, it can be pressed to cause an automatic session termination, overriding a database requirement that permission for termination must be granted.

### 5.7.8 Entering the assigned activities screen

Any operator keying action that causes a return from the operator information screen to the assigned activities screen causes an automatic session termination, overriding a database requirement that permission for termination must be granted.

***Note:*** This method of termination is applicable only during an administrative query session with the external database.

## 5.8 DMS switch-initiated termination

A call arrival on either loop causes an automatic session termination during the time that the operator is involved in an administrative query session with the database, overriding a database requirement that permission for termination must be granted.

Call arrival also causes automatic session termination when the operator requests the DMS switch to send a Centralized Automatic Message Accounting (CAMA) call to the position during an OIA session. This causes a call arrival on the alternate loop.

## 5.9 Suspending an OIA session

The operator may suspend the OIA session during a call to perform operator functions. When this occurs, any open OIA windows are removed from the screen. While the session is suspended in this manner, the OIA windows remain current, even while they are not displayed on the screen. The operator can return to the active OIA session by selecting the OIA application from the applications menu or by pressing an applications menu hot key for the OIA application. When this is done, the OIA windows are re-displayed in the same state as before the session was suspended. Note that when returning to a suspended OIA

session, the applications menu does not request the operator to enter extra data even if the OIA application is datafilled in file XAPPL.TBL for extra data entry.

An OIA session is suspended when the operator invokes one of the following key actions:

- calling
- called
- special
- inter-LATA carrier
- miscellaneous

The operator can end the OIA suspended session by releasing the call from the position (provided that permission to exit is not required from the database).

## 5.10 Data transfer

The OIAGPROT allows for several types (shown below) of data transfer between OPP call data stored in the IWS base and the external database implementing the protocol.

- call type
- calling number
- called number
- loop number

### 5.10.1 Automatic IWS to database transfer

Upon initiation of a session with the external database, the OIA application automatically sends the call type, the unformatted calling and called numbers, and the loop number to the external database. The external database can then use this information for default values in queries. The service provider should always provide the operator with the ability to overwrite these default values if necessary. If data is not present in one of the four fields, then the database receives no default data for that field.

Outpulsed (called) number information is also transferred from the IWS position to the external database. This is done automatically if the operator causes the DMS switch to outpulse a number while a session with the external database is active.

The OIA application also sends service provider identification (SPID) text and numbers to an OIA-compliant database. The OIA application receives SPID information from the DMS switch, which right-pads the values. Note that the OIA application displays SPID information and passes it on to the external database only if it is sent by the DMS switch.

### 5.10.2 IWS to database transfer with operator input

With operator input, the OIA application can send an OIA-compliant database the location routing number (LRN) of a directory number.

The operator can assess the portability status of a directory number (DN) by accessing the functions menu and selecting an LRN function (either LNP Info Calling, LNP Info Called, or LNP Info Special). If the status returned from the DMS switch is ported, the OIA application sends the LRN (which is derived from the ported DN) to the OIA-compliant database at session start, session continue, and session restart.

If the operator selects an LRN function and subsequently applies for call details on the same call, the DMS switch does not send LRN information with those call details. Note that the OIA application must receive the LRN from the DMS switch or the information cannot be forwarded to the database.

### 5.10.3 Automatic database to IWS transfer

The calling and called numbers can be transferred from the external database to the DMS switch for outpulsing by using the OIA protocol to instruct the IWS position to send the number specified to the DMS switch.

The OIA application can receive a valid mobile number from the OIA-compliant database and send it to the DMS switch.

### 5.10.4 Database to IWS transfer with operator input

For OIA-compliant databases with compatible IC tables, the OIA application accepts the index that represents the inter-LATA carrier (IC) chosen by the caller, and when the operator keys <index number>, **Start**, it sends the actual IC code to the DMS switch.

## 5.11 OIA on the service assistant and in-charge positions

Service assistants and in-charge managers can access the external database using the OIA protocol just as general operators do, as long as the application that is currently active at the terminal supports the applications menu key and/or applications menu hot key. The service assistant or in-charge manager can also access the external database while monitoring, thus enhancing the ability to follow a general operator’s interaction with that database. However, the service assistant or in-charge manager who is monitoring another operator is not able to view the general operator’s interaction with the external database.

## 5.12 Communication failure

The OIA application responds to a communications failure in one of two ways. The first is through the OIA link sanity timer. Whenever the OIA application sends a message to the external database, a link sanity timer is set. If this timer expires before the reply is received from the external database, it is assumed that the links are not available. When this happens, the OIA application closes any currently open OIA windows and displays the message “No OIA” in the transient field of the MSA for approximately three seconds.

The duration of the link sanity timer is a datafillable parameter that is specified in the OIA initialization file OIAINI.INI. See Section 7.4, “Configuring OIAINI.INI,”for the details.

The second way in which the OIA application responds to a communications failure is through the IWS network layer. Whenever an attempt to communicate with the external database fails at the network layer, the OIA application in the IWS position is notified. Upon receiving this notification, the OIA application closes any currently open OIA windows and displays “No OIA” in the transient field of the MSA.

The operator can attempt to access the OIA application any time. A communications failure does not disable the OIA application selections in the applications menu, nor does it disable any applications menu hot keys that may have been defined for the OIA application. However, the operator is not able to start a new OIA session until the communication links with the external database have been re-established.

## 5.13 Interactions with the IWS applications menu

As stated above, OIA sessions are initiated using the IWS applications menu. This section provides some specific characteristics of the interactions between the OIA application and the IWS applications menu.

- If an option for starting an OIA session has not been placed in the applications menu, an OIA session may not be automatically started by the DMS switch.
- If an OIA session is started through the applications menu, then the session is suspended and *must* be re-accessed by using the same applications menu option that was initially used to start the OIA session. For example, assume the applications menu contains two selections that start an OIA session, and these selections are identified in the menu as option 1 and option 2. If option 1 is used to initiate an OIA session, and that session is suspended, the session must be re-accessed through option 1 of the applications menu since option 1 was used to initiate the session.
  This requirement applies to application menu hot keys as well. In other words, the same hot key that was used to initiate the session must be used to re-access the session after it has been suspended.
- If a session is automatically started by the DMS switch at call arrival, and that session is subsequently suspended, the session may only be re-accessed through the applications menu by selecting the lowest OIA option in the menu. For example, assume the applications menu contains two selections that initiate an OIA session, and these selections are identified in the menu as option 1 and option 2. If a call arrives that automatically starts an OIA session, and that session is subsequently suspended, it may only be re-accessed through the applications menu by selecting option 1, since option 1 is the lowest OIA option in the menu.
  This requirement applies to the applications menu hot keys as well. In other words, there must be an applications menu hot key defined for the lowest OIA option of the applications menu, and that hot key is the only one that can be used to re-access a suspended session that originated from an automatic session start.

# 6.0 OIA installation process

Installation of the OIA application is handled as part of a global IWS installation utility. Consult *TOPS IWS Base Platform User's Guide,* 297-2251-010, for instructions on installing the OIA software.

# 7.0 Configuration

The OIA application *WILL NOT* initialize without proper configuration of the initialization (.INI), table (.TBL), and language (.LNG) files. The *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, has further information on configuring these files.

The provisioning tool described in the above document creates a graphical user interface (GUI) for datafilling the necessary files by allowing the service provider to select the appropriate file, edit the file data, and save the changes. The provisioning tool also provides error checking for input and "Help" buttons with informative text about the file being configured.

***Note:*** If invalid or out-of-range datafill is detected in an initialization file by OIA at position initialization, the position may fail to start (or restart). In such a case, an appropriate error message displays.

## 7.1 Initialization file

Files with an ".INI" suffix are run to start applications. Windows initialization files provide a standard format for Windows applications to embed their initialization data. Initialization files allow comment lines that begin with a semicolon. Initialization files are composed of sections and sections are composed of entries. An entry can have an integer value or a string value. The basic form of the file is:

```
; Comment
[section name]
entry=value
```

The OIA application uses one Windows-style initialization file, OIAINI.INI. In addition, OIA must be entered in file MPXINI.INI as a registering application.

## 7.2 Configuring MPXINI.INI

File MPXINI.INI contains a listing of the applications the IWS base application will run when the IWS position is started. To add OIA to file MPXINI.INI, use the IWS provisioning tool. For instructions on datafilling initialization files, refer to *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015. For specific information on file MPXINI.INI, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

Because OIA is not a service-providing application, do not assign it to be the default application for the position. Define the OIA application as one of the registering applications, as shown in figure 12. The TOPS IWS position must be restarted for any MPXINI.INI file changes to take effect.

***Note:*** In figure 12, the default registering application is NTOA. In IWS release 13.0, the NTOA application is renamed the IWS Billing application. Continue to enter NTOA as the name of the default registering application.

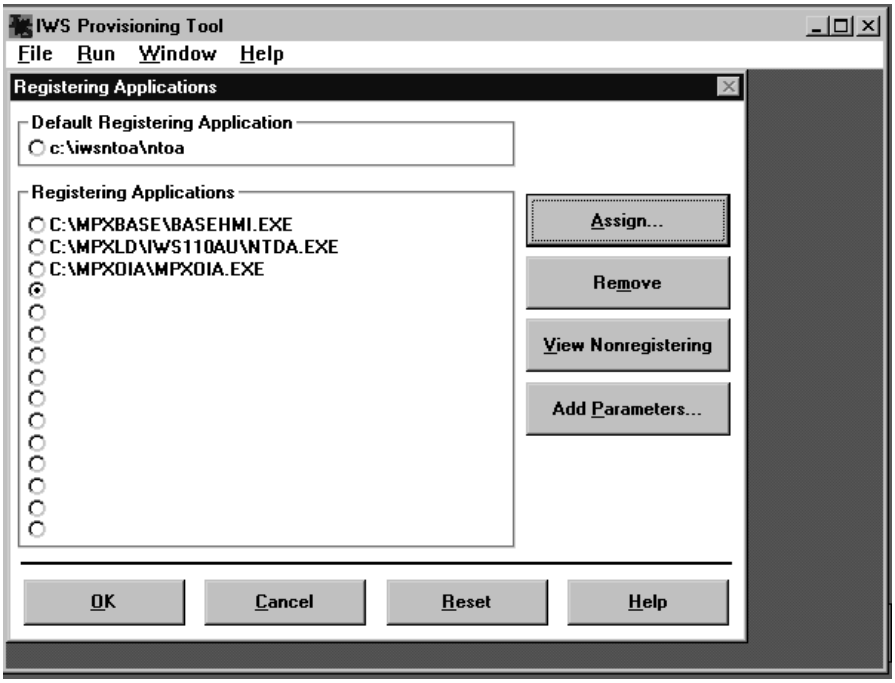


**FIGURE 12. Configuring file MPXINI.INI for OIA**

## 7.3 Configuring MPXNET.INI

For IP positions only, OIA network configuration information is required to be datafilled in the IPCONFIG section of the MPXNET.INI file, which resides in the C:\windows directory. The OIANode, OIAPortIn, and OIAPortOut parameters are required on an IP position running the OIA application.The OIANode parameter contains the host name (mapped to an IP address in the HOSTS file) of the OIA database that the IP position's OIA application communicates with. The OIAPortIn and OIAPortOut parameters define the UDP port numbers for incoming and outgoing messaging to the OIA database. For instructions on datafilling initialization files, refer to *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015. For specific information on file MPXNET.INI, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

## 7.4 Configuring OIAINI.INI

File OIAINI.INI resides in the standard Windows directory, C:\windows. File OIAINI.INI is used solely by the IWS OIA application, and the link sanity timer is the only parameter in the file.

Parameter LinksTimer specifies the duration of the link sanity timer in seconds. At the expiration of this timer, the OIA application assumes that links are not available. When this happens, the OIA application resets all internal states, clears all OIA screen elements, and becomes ready to start a new session.

The maximum value that can be specified for LinksTimer is 30 seconds. If a larger value is specified, the OIA application replaces that value with 30 seconds. The minimum value

that can be specified is one second. If a smaller value is specified, OIA replaces that value with one second. The default value is eight seconds. If the OIA application can locate file OIAINI.INI in the C:\WINDOWS directory, or if the OIA application cannot open the file for some reason, LinksTimer will be given a value of eight seconds.

# 8.0 Data schema

The files in this chapter can be datafilled with the provisioning tool, described in *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015. These sections provide an overview of the files that must be datafilled for the OIA application to run on the IWS position.

## 8.1 Table files

Two table files, XSERVS.TBL and XAPPL.TBL, must be datafilled for the OIA application to run on the IWS position.

### 8.1.1 XSERVS.TBL

File XSERVS.TBL contains the TOPS service numbers mapped to the IWS applications that provide the services. For the IWS base application to know about the services that OIA provides, file XSERVS.TBL must be modified. When the Queue Management System (QMS) is in use, the TOPS services listed in this file must refer to the same TOPS services datafilled in DMS table TQMSSERV. Figure 13 provides an example of the datafill that might be used to provision file XSERVS.TBL.

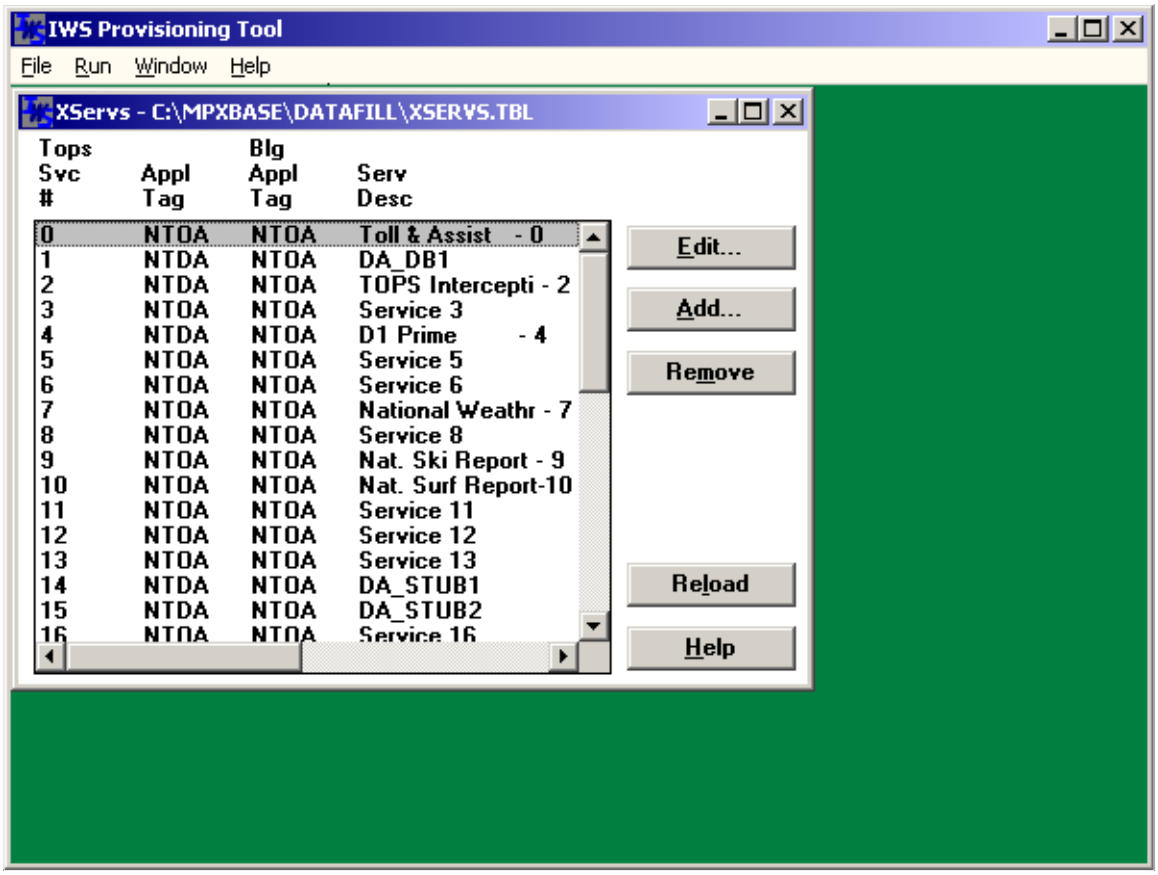


**FIGURE 13. Sample XERVS.TBL datafill in provisioning tool**

Table 4 shows the range of values of the fields belonging to file XSERVS.TBL. The table is followed by a description of each field.

**TABLE 4. XSERVS.TBL fields**

| Field name | Range of values | Sample values |
|---|---|---|
| TOPS Svc # | 0-62 | 22 |
| Appl Tag | up to 8 ASCII char | MPXOIA |
| Blg Appl Tag | up to 8 ASCII char | NTOA |
| Serv Desc | up to 19 ASCII char | OIA |
| Service type text | up to 6 char | OIA |
| Restricted billing table | 0,1,2 | 1 |

**TOPS Svc #:** The number of the application or service. With the QMS call queuing system in the DMS switch, the service numbers in this file MUST match the service numbers in the corresponding DMS table, TQMSSERV. These numbers must be between 0 and 62.

**Appl Tag:** The application tag is a text string that identifies the position executable that provides the application. Be sure to use the exact tag shown in Figure 14.

**Blg Appl Tag:** The billing application tag is a text string that identifies the position application providing the billing functions for the TOPS service. Be sure to use the exact tag shown in Figure 13.

***Note:*** As of IWS release 13.0, the NTOA/NTOA Plus application was renamed the IWS Billing application. Continue to enter NTOA as the billing application tag in table XSERVS.

**Serv Desc:** The service description is a text string that provides the name of the service.

**Serv Type Text:** The service type text is a string that can be displayed by applications at call arrival to identify the TOPS service of the new call.

**Rest Bill Tbl:** The number that identifies which restricted billing table to use for display of restricted billing information.

0 - No restricted billing table
1 - Toll restricted billing table
2 - DA restricted billing table

### 8.1.2 XAPPL.TBL

File XAPPL.TBL lists the applications that can be accessed without the DMS switch to a value that represents that application index on the IWS applications menu. To allow OIA to be accessed through the IWS applications menu, add the OIA application to file XAPPL.TBL. Figure 14 provides an example of the datafill that might be used to provision file XAPPL.TBL, using the provisioning tool.

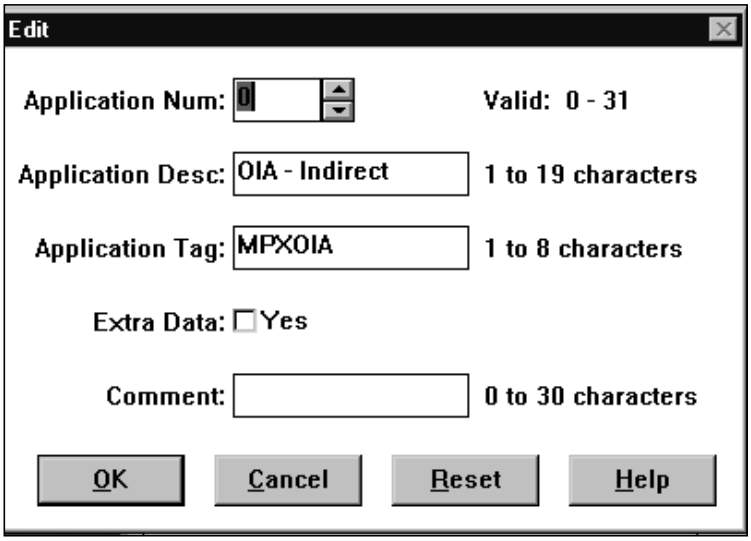


**FIGURE 14. Datafill for OIA-direct in XAPPL.TBL**

Table 5 shows the range of values of the fields belonging to file XAPPL.TBL. The table is followed by a description of each field.

**TABLE 5. XAPPL.TBL fields**

| Field name | Range of values | Sample values |
|---|---|---|
| Appl Num | 0-31 numeric | 1 |
| Appl Desc | up to 19 ASCII char | OIA-direct |
| Appl Tag | up to 7 ASCII char | MPXOIA |
| Extra Data Indicator | check box | Y |

**Appl Num:** The number of the application. Each application entry must have a unique number.

**Appl Desc:** The application description is a text string that provides the name of the application. Following the example, a second editing session can be opened to datafill OIA-indirect.

**Appl Tag:** The application tag is a text string that identifies the position executable that provides the application. Be sure to use the exact tag shown in figure 14.

**Extra Data Indicator:** An indication that the operator will be prompted for extra data input when this application is chosen from the menu. Check the "Y" box to prompt for extra data to allow direct initiation of a session in OIA. Leave the box unchecked when datafilling for OIA-indirect.

## 8.2 Language files

Language data files are provided for text in the MSA, call headlines, and call information windows. Each language data file contains text strings, which are assigned to specific string IDs. The content of each string can be changed, but the string cannot be deleted and the string must not exceed its maximum length. If the quoted string is longer than the allowed field length, the string is truncated. Use the provisioning tool to datafill language files. See *TOPS IWS RAMP and Provisioning User's Guide*, 297-2251-015, for instructions on datafilling language files.

The default language in the data files provided with the OIA application is English text. The content can be changed to reflect any desired language supported by the ANSI character set.

### 8.2.1 OIACIW.LNG

File OIACIW.LNG provides text for display in the call headlines and call information windows. This file contains string identifiers and English language text. String lengths are noted for each parameter.

Table 6 shows the range of values of the fields belonging to file OIACIW.LNG. The table is followed by a description of each field.

**TABLE 6. OIACIW.LNG fields**

| Field name | Range of values | Sample values |
|---|---|---|
| string ID | 4 digits | 0006 |
| text string | max characters varies from field to field (specified in the provisioning tool displays) | CLGNme: |

**string ID**: This field contains a value that identifies a text string.

**text string:** This field contains text for display in the call headlines and call information fields.

***Note:*** Some of the text displayed in the service/type field of the call information window comes from base datafill files XSERVS.TBL and XCLLORIG.TBL.

### 8.2.2 OIAMSA.LNG

File OIAMSA.LNG is the OIA message/status language file. This file associates an English language text string with a string ID for display in the MSA. Each of the different MSA fields has its own maximum length. The MSA is described in detail in *TOPS IWS Base HMI Application Guide*, 297-2251-013.

Table 7 shows the range of values of the fields belonging to file OIAMSA.LNG. The table is followed by a description of each field.

**TABLE 7. OIAMSA.LNG fields**

| Field name | Range of values | Sample values |
|---|---|---|
| string ID | 4 digits | 0002 |
| text string | max characters varies from field to field (specified in the provisioning tool displays) | Rls Calling |

**string ID**: This field contains a value that identifies a text string.

**text string:** This field contains text for display in application message field V and the transient field of the MSA.

# 9.0 Initialization/runtime errors displayed with message boxes

Errors can occur within the OIA application during initialization or runtime. It may not be possible to create a log during initialization, and some runtime errors require immediate attention to resolve. In these cases, OIA displays the error messages in Microsoft Windows message boxes.

A message box can usually be cleared by pressing the space bar on the keyboard. If a problem occurs during initialization, the OIA application displays a message box describing the problem, then terminates along with all registering applications. At this time, restart the position and correct the problem. In some cases, another window will have the keyboard focus, and the space bar will have no effect. During these instances, restart the position and correct the problem, or take the appropriate action described in the following pages.

A list of the error messages that are reported in messages boxes by the OIA application is contained in file OIAMSGS.DOC. This file contains the text that is displayed in the message box, a description of the problem, and a recommended course of action. The file is located in the C:\MPXBASE directory and may be viewed with the editor of your choice.

# 10.0 OIA tools

## 10.1 Accessing OIA windows

The tools described in this section are intended to be used by Nortel Networks field support personnel or appropriate operating company support personnel.

Basic knowledge about DOS and Microsoft Windows environments is assumed. In general, information about other vendors' tools is not duplicated in this document. The appropriate tools are referenced as needed.

## 10.2 Tracing OIA messages

This section of the document describes the OIA trace tool. The intended design of the OIA trace tool is to write unparsed messages received from and sent to an external database by an IWS OPP position to a user-specified file. Each message has a time stamp sent with it to help you trace the OIA communication going between a TOPS IWS workstation and an external database.

The unparsed messages sent to the user's file are formatted to a hex notation. To be able to interpret the messages, run the OIA trace tool file through the OIA post-analyzer. The OIA post-analyzer formats the messages into a readable format and outputs a file for the user to evaluate. The OIA post-analyzer is discussed in the next section.

### 10.2.1 Accessing the OIA trace tool

Access to the OIA trace tool is through the OIA application window. Figure 15 shows the OIA application window.


**FIGURE 15. Illustration of the OIA application window**

### 10.2.2 Turning on the OIA trace tool

Once you have accessed the OIA application window, use the following instructions to turn on the OIA trace tool.

1. Press **Alt** to select the menu bar. Note that the name on the menu bar has an underlined letter.
2. For the "Msg Trace" menu, press **Alt, M** to open the menu. The menu pops down, showing the "Trace On" and the "Trace Off" menu selections.
3. Press **T** to turn on the trace tool. (See figure 16.) If the 'Trace On" menu selection is already highlighted, just press **Enter**.


**FIGURE 16. OIA trace tool with "Trace On" selected**

4. A dialog box appears (see figure 17) that allows the user to specify a file name for storing the unparsed data. If the dialog box is obscured by the MSA, press **Alt** and the space bar simultaneously to bring down the dialog box's menu list.

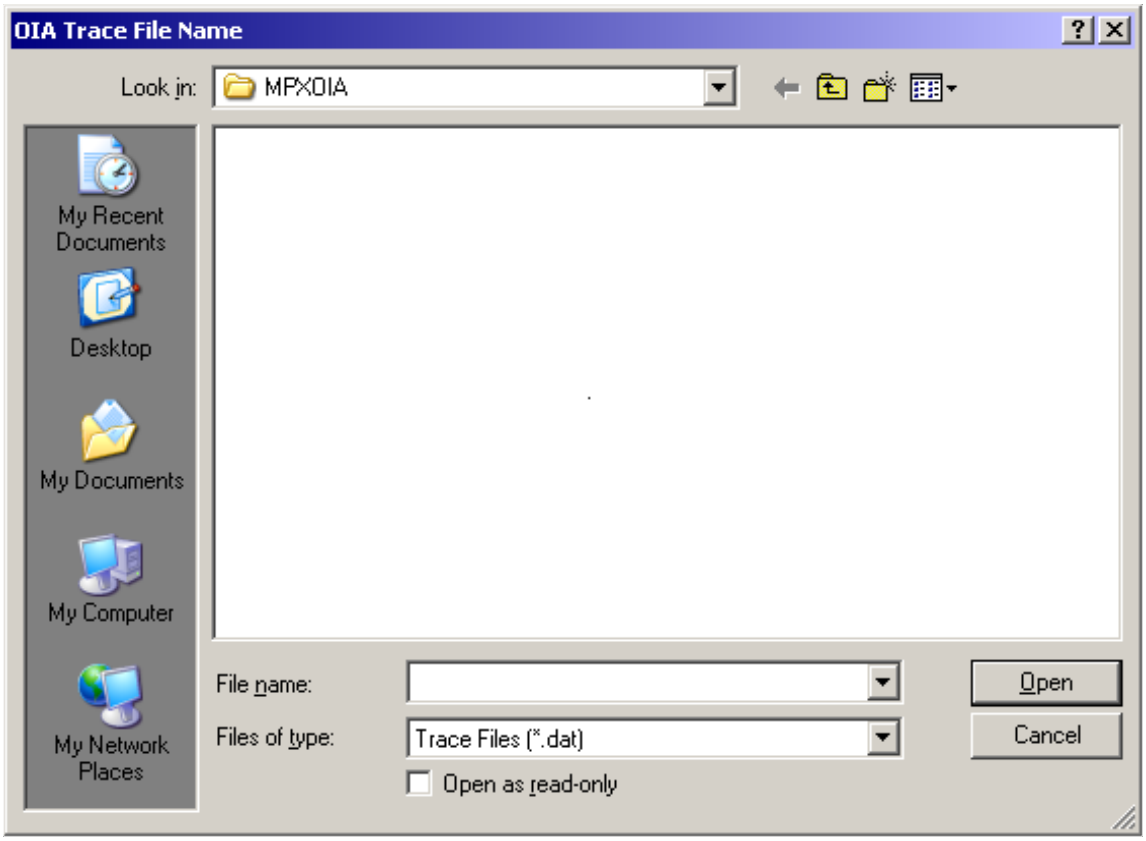


**FIGURE 17. OIA trace tool dialog box**

5. Press **M** for MOVE, then use the arrow keys (On the IWS keyboard the equivalent arrow keys are: down arrow = **Ca Call**, up arrow = key above **Ca Call**, right arrow = **OIA**, and left arrow = **Rls Cld.**) to move the box so it is not obscured by the MSA.

6. Once you name the trace file, press **Enter** to take down the dialog box and start the OIA trace tool.

The OIA trace tool initially sends a time stamp to your file with a message indicating the starting of the trace tool. Every time OIA sends or receives a message from an external database, it attaches a time stamp and a small message (such as "Incoming message from

external database” or “Outgoing message to external database”) to the unparsed message, and then writes it to your file.

When the OIA trace tool file has reached a size of 100,000 bytes, it sends a message to the file and creates a log indicating that the maximum file size has been reached. It then turns off the OIA trace tool.

### 10.2.3 Turning off the OIA trace tool

When you want to turn off the OIA trace tool, access the OIA application window and repeat steps 1 and 2 above. Press the underlined key “O” on the “Trace OFF” selection of the menu to turn off the OIA trace tool. (See figure 18.) The last thing the OIA trace tool does is to send a time stamp to your file with a message indicating the OIA trace tool has been turned off.


**FIGURE 18. OIA trace tool with “Trace Off” selected**

Figure 19 provides an example of the output of the OIA trace tool for a logon request and the response from the external database.

```
************************************************************
** 1999 March 02 10:20:14:67 Starting OIA Debug Tracing **
************************************************************
*1999 March 02 10:20:40:65 Outgoing Message to External Database *
a1 82 00 4a 30 82 00 19 02 82 00 01 00 02 82 00
01 01 04 82 00 0b 11 00 00 00 00 00 00 00 00 00
01 30 82 00 29 04 82 00 04 21 02 01 02 30 82 00
0e 04 82 00 03 31 00 03 04 82 00 03 32 33 32 30
82 00 0b 04 82 00 03 31 00 04 04 82 00 00
*1999 March 02 10:21:41:80 Incoming Message from External Database*
a2 82 00 38 30 82 00 0a 02 82 00 01 00 02 82 00
01 02 04 82 00 0b 11 08 00 00 00 02 01 01 00 00
01 30 82 00 17 04 82 00 04 21 03 01 01 30 82 00
0b 04 82 00 03 31 01 05 04 82 00 00
************************************************************
**1999 March 02 10:26:47:35 End Tracing **
************************************************************
```

**FIGURE 19. Example of the output of the OIA trace tool**

## 10.3 Analyzing OIA messages

This section describes the OIA post-analyzer tool. The intended design of the OIA post-analyzer tool is to take the file created by the OIA trace tool, analyze the data, then output the results to a file in an understandable format. The OIA post-analyzer tool is a Windows executable, which must be run under Microsoft Windows.

***Note:*** The use of the OIA post-analyzer tool is not supported while the position is in service.

#### 10.3.0.1 Accessing the OIA post-analyzer tool through the OIA window

Once you have accessed the OIA application window, use the following instructions to turn on the OIA post-analyzer tool.

1. Press **Alt** to select the menu bar (shown in figure 20). Note that the name on the menu bar has an underlined letter.

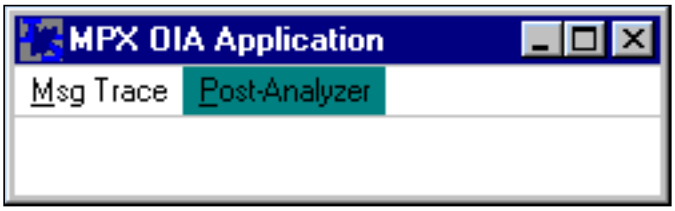


**FIGURE 20. OIA "Post-analyzer" menu selected**

2. For the "Post-Analyzer" menu press **Alt, P** to start the post-analyzer tool. Enter the name of the OIA trace tool file in the dialog box shown in figure 21. If the dialog box is obscured by the MSA, press **Alt** and the space bar, simultaneously, to bring down the dialog box's menu list. Press **M** for MOVE, then use the arrow keys (On the IWS keyboard the equivalent arrow keys are: down arrow = **Ca Call**, up arrow = key above **Ca Call**, right arrow = **OIA**, and left arrow = **Rls Cld.**) to move the box so it is not obscured by the MSA.

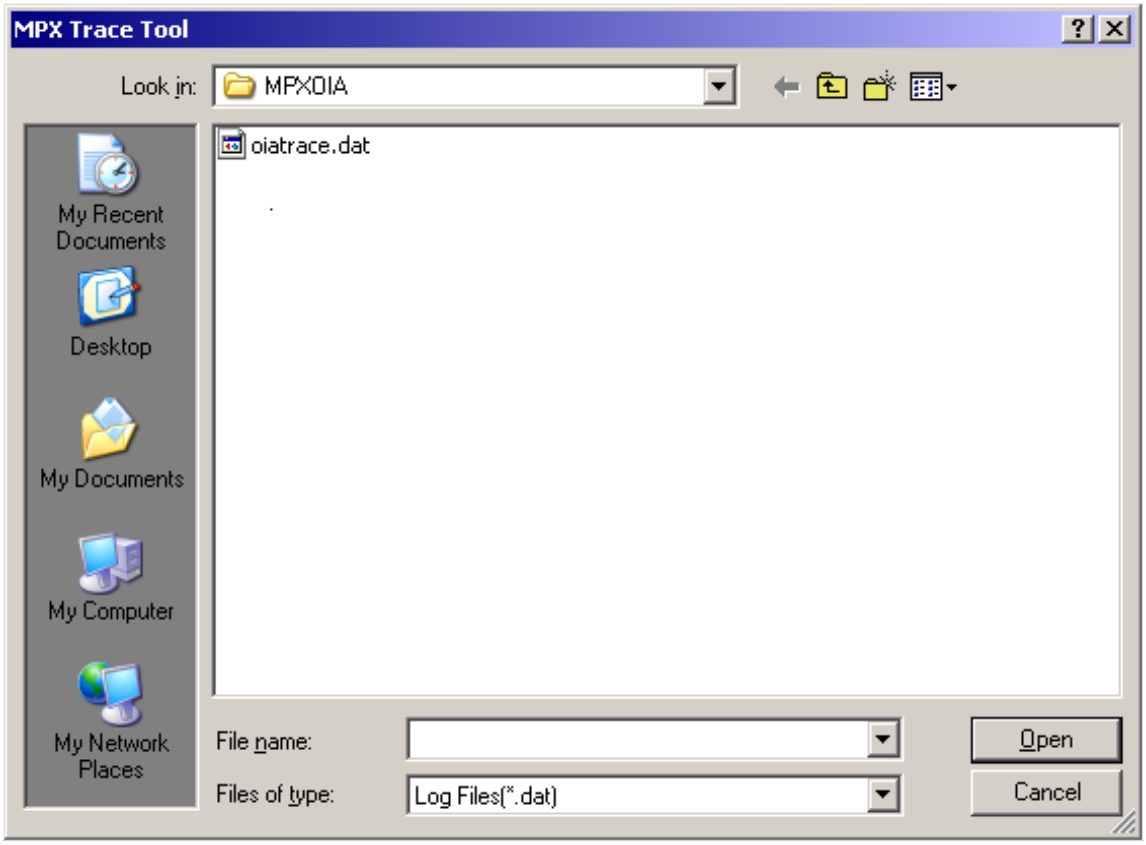


**FIGURE 21. Trace file name dialog box example**

3. Once you input the name of the OIA trace tool file, press **Enter**.
4. The post-analyzer processes the OIA trace tool file and sends a message box to the screen indicating it is finished, and displaying the name of the OIA post-analyzer tool file. (See Figure 22.) The name of the OIA post-analyzer tool file is the same as the OIA trace tool file but with a ".txt" extension.

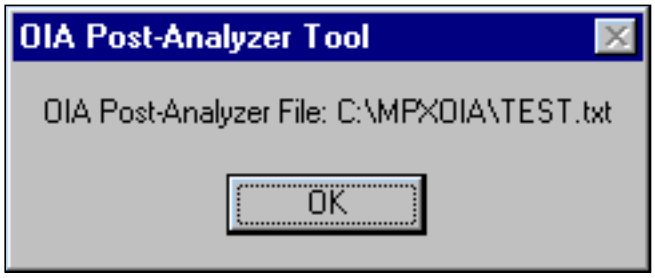


**FIGURE 22. Post-analyzer file name message box example**

5. Press **Enter** to remove the message box.

You can now edit the file using your editor. For information about existing editors on the system, refer to the Microsoft Windows user's guide.

### 10.3.0.2 Accessing the post-analyzer tool through Program Manager

To access the Program Manager window, refer to *TOPS IWS Base Platform User's Guide*, 297-2251-010.

Once you have accessed the Program Manager window, follow the instructions to turn on the OIA post-analyzer tool.

1. Press **Alt** to select the menu bar. Note that the names on the menu bar have underlined letters.
2. Press **Alt, F** to get the File menu list.
3. Press **R** to run the post-analyzer tool. A dialog box appears.
4. Type `\mpxoia\oiaanlzr.exe` on the command line and press **Enter.** Enter the name of the OIA trace tool file in the dialog box. If the dialog box is obscured by the MSA, press **Alt** and the space bar, simultaneously, to bring down the dialog box's menu list. Press **M** for MOVE, then use the arrow keys (On the IWS keyboard the equivalent arrow keys are: down arrow = **Ca Call**, up arrow = key above **Ca Call**, right arrow = **OIA**, and left arrow = **Rls Cld.**) to move the box so it is not obscured by the MSA.
5. Input the name of the OIA trace tool file and press **Enter**.
6. The post-analyzer processes the OIA trace tool file and sends a message box to the screen indicating it is finished and informing you of the name of the OIA post-analyzer tool file. The name of the OIA post-analyzer tool file is identical to the OIA trace tool file but with a ".txt" extension.
7. Press **Enter** to remove the message box.

Table 8 provides an example of the OIA post-analyzer tool output.

**TABLE 8. OIA post-analyzer tool output example**

```
   ****************************************************************
** 1999 March 02 10:21:14:67  Starting OIA Debug Tracing  **
   ****************************************************************

   **1999 March 02 10:21:40:65 Outgoing Message to External Database

   Description                          Hex          Value
   OPDU Type                            xa1          Invoke OPDU
   Length Size                          x82          130
   Length of OPDU                       x004a        74

   Invoke Sequence                      x30          48

   Invoke ID Integer                    x02          2
   Length Size                          x82          130
```

**TABLE 8. OIA post-analyzer tool output example (Continued)**

| | | |
|---|---|---|
| Length of Invoke ID | x0001 | 1 |
| Invoke ID | x00 | 0 |
| Invoke OPDU Operation Integer | x02 | 2 |
| Length Size | x82 | 130 |
| Length of Invoke OPDU Operation Integer | x0001 | 1 |
| Invoke OPDU Operation | x01 | 1 |
| Application Header Sequence | x04 | 4 |
| Length Size | x82 | |
| Length of Application Header Sequence | x000b | 11 |
| Application Header Format ID | x11 | 17 |
| Logical Operator ID | x00 x00 x00 x00 | |
| Operator Qualifier | x00 x00 x00 x00 | |
| Session ID | x00 | 0 |
| Number of Operations | x01 | 1 |
| Operation//Subpart Sequence | x30 | 48 |
| Length Size | x82 | 130 |
| Operation Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Operation Sequence | x04 | 4 |
| Operation Format Identifier | x21 | 33 |
| Opcode | x02 | OIA Logon |
| Object | x01 | Named Field |
| Number of Subcodes | x02 | 2 |
| Subpart Sequence | x30 | 48 |
| Length Size | x82 | 130 |
| Length of Subpart Sequence | x000e | 14 |
| Subcode Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Subcode Sequence | x0003 | 3 |
| Subcode Format Identifier | x31 | 49 |
| Subcode | x00 | Validate |

**TABLE 8. OIA post-analyzer tool output example (Continued)**

```
Subobject                          x03          Operator Name

Data Sequence                      x04          4
Length Size                        x82          130
Length of Data                     x0003        3
```

```
Data
==============================

232
==============================

Subpart Sequence                   x30          48
Length Size                        x82          130
Length of Subpart Sequence         x000b        11

Subcode Sequence                   x04          4
Length Size                        x82          130
Length of Subcode Sequence         x0003        3
Subcode Format Identifier          x31          49
Subcode                            x00          Validate
Subobject                          x04          Password

Data Sequence                      x04          4
Length Size                        x82          130
Length of Data                     x0000        0

*1999 March 02 10:21:41:80 Incoming Message from External Database*

Description                        Hex          Value
================================   ============ ===============
==                                 ====
OPDU Type                          xa2          Return Result
                                                OPDU
Length Size                        x82          130
Length of OPDU                     x038         56
```

**TABLE 8. OIA post-analyzer tool output example (Continued)**

| | | |
|---|---|---|
| Result Sequence | x30 | 48 |
| Length Size | x82 | 130 |
| Length of Result Sequence | x000a | 10 |
| Invoke ID Integer | x02 | 2 |
| Length Size | x82 | 130 |
| Length of Invoke ID | x0001 | 1 |
| Invoke ID | x00 | 0 |
| Result OPDU Operation Integer | x02 | 2 |
| Length Size | x82 | 130 |
| Length of Result OPDU Operation Integer | x0001 | 1 |
| Result OPDU Operation | x02 | 2 |
| Application Header Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Application Header Sequence | x000b | 11 |
| Application Header Format ID | x11 | 17 |
| Logical Operator ID | x08 x00 x00 x00 | |
| Operator Qualifier | x02 x01 x01 x00 | |
| Session ID | x00 | 0 |
| Number of Operations | x01 | 1 |
| Operation//Subpart Sequence | x30 | 48 |
| Length Size | x82 | 130 |
| Length of Operation//Subpart Sequence | x0017 | 23 |
| Operation Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Operation Sequence | x0004 | 4 |
| Operation Format Identifier | x21 | 33 |
| Opcode | x03 | OIA Logon Response |
| Object | x01 | Named Field |
| Number of Subcodes | x01 | 1 |
| Subpart Sequence | x30 | 48 |
| Length Size | x82 | 130 |

**TABLE 8. OIA post-analyzer tool output example (Continued)**

| | | |
|---|---|---|
| Length of Subpart Sequence | x000b | 11 |
| | | |
| Subcode Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Subcode Sequence | x0003 | 3 |
| Subcode Format Identifier | x31 | 49 |
| Subcode | x01 | OIA Logon Confirmed |
| Subobject | x05 | Logon Text |
| | | |
| Data Sequence | x04 | 4 |
| Length Size | x82 | 130 |
| Length of Data | x0000 | 0 |

```
**********************************************************************
** 1999 March 02 10:26:47:35  End Tracing  **
**********************************************************************
```

# 11.0 Engineering information

OIA requires the minimum hardware described in *TOPS IWS Base Platform User's Guide*, 297-2251-010.

# 12.0 Open Information Access logs

The logs generated by the OIA application are sent to the IWS base log application. Refer to *RAMP and Provisioning Guide*, 297-2251-015, for specific information on the log report format and how to view the logs. A list of logs generated by the OIA application (oialogs.doc) is in the c:\mpxoia directory and may be viewed with the editor of your choice.

# 13.0 Revisions

## 13.1 Revisions for release 17.0/17.1

- Updated the IWS operating system from Windows 95 to Windows XP Professional.
- For IP positions only, OIA network configuration information is required to be datafilled in the IPCONFIG section of the MPXNET.INI file, which resides in the C:\windows directory.
- New screen examples for Figure 13, Figure 17, and Figure 21.

## 13.2 Revisions for release 15.2

- No revisions in release 15.2.

## 13.3 Revisions for release 15.0

- No revisions in release 15.0.

## 13.4 Revisions for release 14.0

- A new menu allows the operator to transfer certain calls to queues designated to handle calls of that type. The call type for queueing (QT4Q) menu window displays in the operator information window when the operator presses the **CT4Q** key on the IWS keyboard twice. Up to 2046 call types for queueing can be listed in the CT4Q menu.
- A new **CT4Q** key allows access to the new CT4Q menu. Before it can be used, the **CT4Q** key must be bound to a key on the IWS keyboard.
- New IWS base files CT4QMENU.LNG and XCT4QMNU.TBL support the operations of the CT4Q menu.

## 13.5 Revisions for release 13.0

- No revisions in release 13.0.

## 13.6 Revisions for release 12.0

- No revisions in release 12.0.

## 13.7 Revisions for release 11.0

- A key macro can record multiple key actions and perform them as a single keystroke. Up to 25 key actions can be recorded in a key macro, and up to 25 key macros can be defined. The KeyBind utility is used to set up and edit key macros for use on the IWS position.

- An operating company can indicate that calls from a specific subscriber line do not arrive at an automated service (that all such calls go directly to an operator) and cannot be released to any automated service. If the subscriber requests that an individual call be released to an automated service, the operator can use the new Allow Automation function to release that call to an automated service.
- In file XTGDSPL.TBL, you can now assign from 1 through 254 trunk group displays of up to eight characters each.

## 13.8 Revisions for release 10.0

- The HMI for the OIA application has been updated to correspond with the HMI for the NTOA application. File OIACIW.LNG has been modified to provide new labels for the new fields described below.
  - — In the new call headlines area, two fields display SPID/trunk group information and OLNS information.
  - — In the call information area, a field has been added to display the inter-LATA carrier.
  - — These strings in file OIACIW.LNG replace existing strings:

| | |
|---|---|
| IC: | string ID 0005 |
| CLGNme: | string ID 0006 |
| CLGNum: | string ID 0007 |
| Txt: | string ID 0008 |
| CLDNme: | string ID 0009 |
| CLDNum: | string ID 0010 |

## 13.9 Revisions for release 9.0

- For OIA-compliant databases with compatible IC tables, OIA accepts the index that represents the inter-LATA carrier (IC) chosen by the caller, and when the operator keys **<index number>** + **Start,** sends the actual IC code to the DMS switch.
- OIA can receive service provider identification (SPID) text and numbers from the DMS switch and format them to be understood by an OIA-compliant database. OIA sends SPID information only if it is received by the DMS switch.
- OIA can receive a valid mobile number from the OIA-compliant database and outpulse it to the DMS switch.
- The operator can assess the portability status of a directory number (DN) by accessing the functions menu and selecting an LRN function (either LNP Info Calling, LNP Info Called, or LNP Info Special). If the status returned from the DMS switch is ported, OIA sends the LRN (which is derived from the ported

DN) to the OIA-compliant database at session start, session continue, and session restart. OIA must receive the LRN from the DMS switch or the information cannot be forwarded to the database.

## 13.10 Revisions for release 8.0

- No revisions in release 8.0.

## 13.11 Revisions for release 7.0

- Added colorblind support functionality, which allows the craftsperson to modify normal, error, and alert text to appear in colors more recognizable to colorblind and partially colorblind operators. Also added text flashing capability to help the colorblind operator. Provided the capability to activate this text flashing without enabling IWS colorblind support. Also added new class charge icons for the colorblind operator.
- Eliminated all README files.

## 13.12 Revisions for release 6.0

- Processing for the unknown calling card type was added. The unformatted number that arrives from the DMS in this case will be displayed in the Special field of the OIA Call Information window.
- Processing for both domestic and CCITT No Mutual Honoring Agreement calling card status was added. The number that arrives from the DMS in this case will be displayed in the Special field of the OIA Call Information window.

## 13.13 Revisions for release 5.0

- No revisions in release 5.0.

## 13.14 Revisions for release 4.1

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

## 13.15 Revisions for release 4.0

- Removed descriptions of error messages displayed in Message Boxes from section 4.0. Added a reference to file OIAMSGS.DOC. OIAMSGS.DOC contains the text, description, and recommended course of action for all Message Box error messages.
- Corrected a problem that prevented a new session from being started after OIA links have dropped and been recovered.

## 13.16 Revisions for release 2.0

- A new window has been added that is displayed any time OIA becomes the active application on the IWS operator workstation. This new window is called the OIA Call Information window. It displays call information such as Calling and Called name and number, Service type and call type, etc. Details are contained in the “OIA call information window” section of the chapter “IWS OIA windows.”
- An OIA session may now only be suspended when a call is active at the position.
- When an OIA session is suspended, any open OIA windows are now removed from the screen. When the OIA session is reactivated, the OIA windows will be re-displayed with current information.
- A suspended session may no longer be terminated from the OIA application by pressing the RESET key.
- The OIA key has been replaced on the MPX-IWS keyboard by the Menu key. OIA is now accessed via the Applications menu.
- The applications menu may be accessed from within OIA by pressing the Appl Menu key.
- The value in the Invoke ID Choice field was corrected. The value is supposed to be #A0 when there is an Invoke ID in the message and #A1 when the Invoke ID is not in the message. In previous releases, these values were reversed.
- The Cancel Call key, and the Rls Called key will no longer cause a session to be suspended. The call processing caused by these keys is accomplished from within the OIA application.
- The text “No OIA” has been moved from the 7-character field of the Message/ Status area to the Transient field.
- The OIA application now displays certain DMS call and system information in the Application Field V field in the Message/Status area.
- The OIA Links Sanity Timer was converted from a hard coded value to a datafillable parameter. The value of this timer can be modified by changing the value specified in file OIAINI.INI.

# 14.0 List of terms

**American National Standards Institute (ANSI)**

A standards-setting, non-governmental organization founded in 1918, which develops and publishes standards for transmission codes, protocols, and high-level languages for voluntary use in the United States. IWS fonts are based upon the ANSI character set, with some IWS-specific additions.

**American Standard Code for Information Interchange (ASCII)**

A coded character set used for the interchange of information among information processing systems, communications systems, and associated equipment. ASCII defines one format in which data is exchanged between an input/output device and the device controllers of the DMS switch.

**ANSI**

*See* American National Standards Institute.

**API**

*See* application programmer's interface.

**application programmer's interface (API)**

A Windows messaging protocol and interface functions used to exchange information (for example, between IWS base software and position applications) about system events (such as operator logon, call begin, call end, position maintenance commands), application requests to send Open Position Protocol (OPP) action identifiers (ActIDs) to the DMS switch, and application requests to generate IWS system logs.

**ASCII**

*See* American Standard Code for Information Interchange.

**CAMA**

*See* centralized automatic message accounting.

**centralized automatic message accounting (CAMA)**

A system that produces itemized billing details for subscriber-dialed long distance calls. Details are recorded at a central facility serving a number of exchanges. In exchanges not equipped for ANI, calls are routed to a CAMA operator who gets the calling number and enters it into a computer for billing.

**CGI**

*See* Computer Generation, Inc.

**Computer Generation, Inc. (CGI)**

The company that offers the Operator Reference Database (ORDB), an external database through which IWS operators can reference information in response to customer queries.

**DA**

*See* directory assistance.

**Digital Multiplex System (DMS)**

The Nortel Networks central office switching system in which all external signals are converted to digital data and stored in assigned time slots.

**directory assistance (DA)**

A service that allows a caller to ask an operator to look up information from a telephone listing database.

**directory number (DN)**

The number that indicates the station of a subscriber. A DN normally consists of a three-digit central office code and a four-digit station number.

**DMS**

Digital Multiplex System

**DN**

*See* directory number.

**HMI**

*See* human machine interface.

**human machine interface (HMI)**

The series of commands and responses used by service provider personnel to communicate with the DMS switch. Communication takes place through the MAP terminal and other input/output devices.

**IC**

*See* inter-LATA carrier.

**Intelligent Workstation (IWS)**

The Nortel Networks programmable operator workstation for traditional and non-traditional operator services.

**inter-LATA carrier (IC)**

Any carrier that provides telecommunication services between a point inside a local access and transport area (LATA) and a point either outside that LATA or inside another one.

**IWS**

*See* Intelligent Workstation.

**LAN**

*See* local area network.

**local area network (LAN)**

A network that permits the connection and communication of multiple computers, primarily for the sharing of resources such as data storage devices and printers.

**LNP**

*See* local number portability.

**local number portability (LNP)**

A feature that enables customers to retain directory numbers when they change locations, service providers, or services.

**location routing number (LRN)**

A ten-digit number used to identify uniquely a switch that has ported numbers.

**LRN**

*See* location routing number.

**maintenance and administration position (MAP)**

An interface between operating company personnel and the DMS switch that provides a keyboard and monitor for entering and displaying maintenance and administration information.

**MAP**

*See* maintenance and administration position.

**message/status area (MSA)**

A window on the TOPS IWS screen that is used to relay system, service, and application-specific information to the customer agent.

**MSA**

*See* message/status area.

**NPA**

*See* numbering plan area.

**numbering plan area (NPA)**

Any of the designated geographic divisions of the United States, Canada, Bermuda, the Caribbean, Northwestern Mexico, and Hawaii, within which no two telephones have the same seven-digit number. Each NPA is assigned as a unique, three-digit area code.

**OGT**

See outgoing trunk.

**OIA**

Open Information Access, the protocol used by the (TOPS) IWS to communicate with an external database.

**OLNS**

*See* originating line number screening.

**open position protocol (OPP)**

The protocol required to facilitate communication between a TOPS switch and the TOPS IWS terminal.

**Operator Reference Database (ORDB)**

An external database, provided by Computer Generation Inc., through which the operator can reference information in response to customers' queries.

**OPP**

*See* open position protocol.

**ORDB**

*See* Operator Reference Database.

**originating line number screening (OLNS)**

The ability to query a central, shared line information database that contains attributes for millions of directory numbers, so that, for example, various services can be enabled or disabled based on the dialing number. The OIA Call Headlines window contains a field to display OLNS alphanumeric information.

**outgoing trunk (OGT)**

A trunk used for calls going out to a distant toll center.

**QMS**

*See* Queue Management System.

**Queue Management System (QMS)**

A software package that provides enhanced capabilities for the managing of call queues.

**RAMP**

*See* remote access maintenance position.

**remote access maintenance position (RAMP)**

An IWS position that performs maintenance on other IWS positions to which it is connected. The RAMP functionality is intended for use by operating company personnel at customer sites and Nortel Networks personnel who provide support for IWS operations.

**service provider identification (SPID)**

The actual operating company of the subscriber, which may be different from the trunk group.

**SPID**

*See* service provider identification.

**TOPS**

*See* Traffic Operator Position System.

**Traffic Operator Position System (TOPS)**

A call processing system made up of a number of operator positions, each consisting of a monitor, a controller, a keyboard, and a headset.

# 15.0 Index

DMS-100 Family

# TOPS IWS

OIA Application Guide



Publication number: 297-2251-012
Product release: IWSS0171
Loadname: IWS 17.1
Document release: Standard 17.02
Date: June 2003
Printed in the United States of America

NORTEL NETWORKS™