

Planning for Centrex Switch Integration

2

Overview

Planning for the integration requires the customer to:

- Obtain information needed during the integration process, including parameters to administer on the Lucent™ INTUITY™ windows used for switch integration.
- Provide site-specific information to the service provider central office (CO) and obtain information from the CO.
- Work closely with the CO to ensure that the switch is properly administered.

Purpose

This chapter contains information needed to plan the integration of the Lucent INTUITY system with the following Centrex switches:

- Lucent 5ESS® switch
- Northern Telecom (Nortel) DMS-100 switch
- Nortel SL-100 switch

Worksheets

This chapter includes worksheets to record information needed to complete the integration.

General Considerations

Consider the following information before the on-site installation of the Centrex switch integration hardware:

- The 5ESS, DMS-100, and SL-100 switches can be integrated with the following Lucent INTUITY multi-application platforms (MAPs):
 - MAP/40
 - MAP/40P
 - MAP/100
 - MAP/5P
- For all the Lucent INTUITY platforms, the customer must purchase a multi-port circuit card to be used for the serial connection
- Before the installation, determine which system and hardware you will use. For information about cabling configurations to integrate the Lucent INTUITY system with
 - A 5ESS switch by use of a 3A translator, see [Chapter 4, "Hardware Installation for 5ESS Switch Integration with the 3A Translator"](#).
 - A 5ESS, DMS-100, or SL-100 switch by use of a 202T modem, see [Chapter 7, "Hardware Installation for Centrex Switch Integration with the 202T Modem"](#).
 - A DMS-100 or SL-100 switch by use of a direct connection or any Centrex switch by use of a customer-supplied modem (not a 202T modem), see [Chapter 8, "Hardware Installation for Integration with Direct Connection or Customer- Supplied Modem"](#).
- The DMS-100 and SL-100 switches allow INTUITY AUDIX® subscribers to use an additional feature — the Call Request Retrieval access code feature. Determine if the customer will use this feature and inform them about the feature's capabilities. For more information about this feature, see ["Features and Functionality"](#) in [Chapter 1, "Overview of Centrex Switch Integration"](#).
- You can use multiple hunt groups with the Lucent INTUITY system. See ["Planning for Hunt Groups"](#) below for more information on using multiple hunt groups.

Planning for Central Office Requirements

To ensure that the CO properly administers the switch for integration with the Lucent INTUITY system, the customer must provide site-specific information to the CO. The CO must also provide certain information to the customer.

Worksheet for Providing Central Office Requirements

Use the following worksheet ([Table 2-1](#)) to record information to be provided to the CO.


 **NOTE:**
This worksheet contains site-specific requirements only. For complete switch requirements, see [Chapter 3, "Centrex Switch Requirements and Administration"](#).

Table 2-1. Worksheet for Providing Central Office Requirements

Information Needed by the CO	Information Provided to the CO
Amount of traffic expected.	
Number of voice ports being used.	
Type of message waiting indicator (MWI) used by the majority of INTUITY AUDIX subscribers. <div><div>■</div>Flashing light?</div> <div><div>■</div>Stutter dial tone?</div>	
Extension numbers for the two test subscribers for acceptance testing.	1. 2.
Expected use of the automated attendant and outcalling features. <div><div>■</div>Separate multi-line hunt group (MLHG) required</div> <div><div>■</div>More than one hunt group required</div>	

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Table 2-1. Worksheet for Providing Central Office Requirements — Continued

Information Needed by the CO	Information Provided to the CO
<p>Integration with 3A translator (5ESS switch only):</p> <ul style="list-style-type: none">■ The distance from the customer site to the switch.<ul style="list-style-type: none">— Over 1 km (0.62 mi) — network terminator unit needed— 1 km (0.62 mi) or less — network terminator unit not needed■ Source of the customer's 3A translator and/or a network terminator unit (NT1U-200, NT1U-220 or NT1U-230).<ul style="list-style-type: none">— From the CO— Purchased elsewhere <p>Integration with 202T modem only:</p> <ul style="list-style-type: none">■ Source of 202T modem:<ul style="list-style-type: none">— Supplied by Lucent— Not supplied by Lucent■ Modem settings (see Chapter 6, "Setting the 202T Modem") — to be checked against the settings provided by the CO (see Table 2-2). <p>Integration with direct connection (DMS-100 and SL-100 switches only) or customer-supplied modem (any Centrex switch):</p> <p>Type of cable needed:</p> <ul style="list-style-type: none">■ Straight RS-232■ Null modem	

Worksheet for Obtaining Central Office Information

Use the following worksheet ([Table 2-2](#)) to record information received from the CO.


 **NOTE:**
This worksheet contains site-specific requirements only. For complete switch requirements, see [Chapter 3, "Centrex Switch Requirements and Administration"](#).

Table 2-2. Worksheet for Obtaining Central Office Information

Information Needed from the CO	Information Provided by the CO
All integrations: <ul style="list-style-type: none">■ Multiline hunt group (MLHG) numbers being used. If more than one hunt group is being used, the message desk numbers (MDNs) associated with each hunt group.■ The range of extensions (for example, 0000-9999).■ The number of digits in the dial plan.	
Integration with 202T modem <i>only</i>: Modem settings — to be checked against the settings provided to the CO (see Table 2-1).	
Integration with 3A translator (5ESS switch <i>only</i>): <ul style="list-style-type: none">■ Version number of the switch.■ Number of digits being sent by the switch:<ul style="list-style-type: none">— 7— 10■ 2B1Q encoding usage:<ul style="list-style-type: none">— Yes— No■ The business customer ID (BCID).■ The LCEN (line card equipment number).	

Planning for the Electrical System

The electrical system supplying power to the Lucent INTUITY system 3A translator (if used), and 202T modem must meet the standard electrical requirements and local building codes. The circuit must be on a 20-ampere breaker and be dedicated to the Lucent INTUITY system and associated devices.

Outlets must be grounded in accordance with local and National Electrical Code (NEC) standards. Ground AC units to a solid, stable, single-point ground via the third wire of a 3-prong grounded receptacle that is free from random connections to foreign unstable ground current surges.

When you are connecting to an AC outlet, note the following precautions:

- Do not use an extension cord to connect a device to an outlet.
- Do not use an outlet connected to a wall switch or one subjected to scheduled downtimes.

Electrical Requirements for the 202T Modem

The 202T modem requires a power outlet easily accessible to the modem. This outlet should not share power with other electrical devices that may cause noise, and should not be under the control of a switch. For further information about the operating environment for the 202T modem, see User's Manual 202T Modem, 999-102-1421S, or the equivalent for the shipped modem.

Electrical Requirements for the 3A Translator

An electrical outlet must be within 1.8 m (6 f). of the 3A translator. An uninterruptible 60 Hz 120 VAC power supply is recommended, but not required.

Planning for the 202T Modem

Connectivity options for integration with a 202T modem depend on how the local service provider delivers the 3002 data circuit required for integrations with a modem. The options include:

- Direct connection with an M8K (or M13F) adapter cable to an equalization unit, such as an 829 channel interface device or equivalent
- A 4-wire connection through an adapter

See [Chapter 7, "Hardware Installation for Centrex Switch Integration with the 202T Modem"](#) for more information about connectivity.

Planning for the 3A Translator

Consider the following specifications when preparing a site to install the 3A translator (5ESS switch only) and auxiliary hardware.

Physical Specifications

The 3A translator weighs 0.8952 km (2.4 lbs) and has the following dimensions:

- Height (6.4 cm (2.56 in.)
- Width 26.04 cm (10.25 in.)
- Depth 4.89 cm (9.80 in.)

Additional space is required at the rear of the unit for cables and connectors. Although the 3A translator does not require special air conditioning systems, it does generate some heat. Ensure that the site allows for heat generated by this unit and additional sources.

The power supply weighs 0.7087 km (1.9 lbs) and has the following dimensions:

- Height 5.99 km (2.36 in.)
- Width 7.62 km (3.00 in.)
- Depth 11.99 cm (4.72 in.)

Preparation for Programming

The 3A translator must be programmed with site-specific information, some of which the customer must obtain from the CO.

The following tasks must be completed before programming the 3A translator:

- Ensure that all hardware connections have been made. For information about the connections, see [Chapter 4, "Hardware Installation for 5ESS Switch Integration with the 3A Translator"](#).
- Collect the following information to set the specified options on the 3A translator:
 - The baud rate you are using (SMSIBAUD). This rate must correspond with the setting for the **Baud Rate:** field on the Serial Interface window. (For information about setting this field, see ["Setting the Serial Interface Parameters"](#) in [Chapter 9, "Lucent Intuity Administration for Centrex Switch Integration"](#).)



NOTE:

A baud rate of 1200 is recommended.

- The 5-digit business customer ID (BCID) provided by the CO.
- The line card equipment number (LCEN) provided by the CO. This 8-digit number identifies the integrated services digital network (ISDN) connection to the switch. The number should be broken down as follows:
 - 3-digit switch module number (000-192)
 - 1-digit line unit number (0-7)
 - 2-digit line group controller (00-15)
 - 2-digit line card number (00-31)



NOTE:

The digits might be preceded by an alphabetic character. That character is part of the LCEN and must be included when the 3A translator is programmed.

- Determine whether 7 or 10 digits is provided by the switch (DN SIZE). For the 5ESS switch, 10 digits are provided with switch version 5. With earlier versions, 7 digits are provided.

Planning for Call Forwarding

A call forwarding path (also called a call coverage path) directs the switch to transfer unanswered calls to a hunt group or to another extension. When a call is covered, the switch forwards the called number to the Lucent INTUITY system. The system detects that the called number is administered as a specific system subscriber's extension and treats the call as one to be answered and recorded. Depending on how the extension is configured, the call may be answered by either the INTUITY AUDIX® or the Lucent INTUITY Lodging application.

The switch must be administered to assign call forwarding for each subscriber's extension to the appropriate Lucent INTUITY system number.

Planning for Hunt Groups

A hunt group is a set of extension numbers assigned to another telephone number. This number is called the start hunt number, the leading member of the hunt, or the pilot hunt group number. When a call is received by this telephone number, a programmed search of the hunt group is made and the call is forwarded to a member of the hunt group that is not busy. For example, when two calls are made to the start hunt number, both are forwarded to two free extensions in the hunt group. Each number in the hunt group corresponds to a channel on the Lucent INTUITY system.

To configure a hunt group for calls being received by the Lucent INTUITY system:

- The switch must be administered to create a hunt group for the Lucent INTUITY system.
- The hunt group must be administered on the Lucent INTUITY system.
- The switch ports that terminate the hunt group extensions must be wired to the voice ports on the Lucent INTUITY platform.
- The voice ports must be administered on the Lucent INTUITY system.

There are three possible configurations for hunt groups:

- Single use (single hunt group)
- Shared use (single hunt group)
- Dedicated use (multiple hunt groups)

Single Hunt Group

In the simplest integrations, only one hunt group is administered for all calls. For example, the start hunt number may be administered as the INTUITY AUDIX message retrieval number (the telephone number system subscribers call to retrieve voice mail messages). All calls through the Lucent INTUITY system are ultimately forwarded to the one hunt group. The channels in the system have single usage for that hunt group.

It is also possible for the channels in the one hunt group to have shared use for coresident applications. For this to occur:

- A phantom or dummy extension number that is not associated with a switch port or a telephone station must be administered on the switch.
- A call forwarding path must be administered for the phantom number.

Calls to the phantom number are forwarded to the hunt group. For example, the start hunt number may be administered for INTUITY AUDIX message retrieval, but a phantom number is set up for the Lucent INTUITY Lodging application. When the phantom number is dialed, the switch forwards the call to a channel in the hunt group.

From there the Lucent INTUITY system service assignment determines the correct application to start for the call. In this example, that would be the Lodging application.

There must be two numbers administered in a coresident system, a start hunt number for one application, and a phantom number for the coresident application.



CAUTION:

All phantom numbers must be assigned to switch 0 in the INTUITY AUDIX database. If switch 0 is not used for these extensions, which do not have real stations, the system will try to turn message waiting indicators (MWIs) on and off and continually fail. This condition can seriously impede system performance.

Multiple Hunt Groups

Multiple hunt groups containing channels with dedicated usage groups are typically configured for the purposes of traffic management. This feature enables a set of channels to always be reserved for a specific application only. These channels are always available for that application regardless of other traffic demands on the system. For example, separate hunt groups may be administered on a system for INTUITY AUDIX message retrieval and the Lucent INTUITY Lodging application. The number of hunt groups that can be administered depends on the channel capacity of the Lucent INTUITY system. A separate hunt group can be administered for each channel.

MDN and Channel Mapping

The multiple hunt group feature allows the Lucent INTUITY system to recognize and use the message desk number (MDN) field provided by the switch in the SMSI (simplified message service interface) protocol and the SMDI (simplified message desk interface) protocol. MDNs are also called:

- Main directory numbers
- Message service center numbers
- Multi-line hunt groups (MLHGs)
- Hunt – multi-lines (HMLs)

An MDN is a series of digits, from 001 to 999, that the switch transmits as part of the call information to the Lucent INTUITY system. Each start hunt member number is associated with an MDN. Within each MDN, each member of the hunt is associated with a logical terminal number (LTN), for example LTN1, LTN2, LTN3, etc., and a telephone number.

For each hunt group, the MDN, LTNs, and telephone numbers are mapped to voice card ports and channel numbers on the Lucent INTUITY system. The configuration rules for hunt groups are:

- Any unique MDN/LTN can be mapped to any Lucent INTUITY channel in any order.
- Each unique MDN/LTN can be mapped to only one channel.
- An MDN can have any number of channels mapped to it (up to the maximum of 64 channels supported on a Lucent INTUITY system).
- As many hunt groups can be configured as there are channels on the Lucent INTUITY system (up to a maximum of 64).

Installing the Lucent INTUITY system with a single hunt group or multiple hunt groups requires:

- The MDN mapping and the extension numbers to call to test the system (see the worksheets in [Table 2-3](#) and [Table 2-4](#)).
- A telephone to place test calls for validation. This telephone should be located so that the installer can view the system monitor while placing the calls. If this is a new system installation, one of the two test telephones for the INTUITY AUDIX application or the test telephone for the Lucent INTUITY Lodging application can be used.
- The appropriate translations on the switch so that calls can be forwarded to the Lucent INTUITY system and the appropriate MWI indication (stutter tone or MWI lamp) can be turned on or off.

Before the installation, review with your project manager the extent of your responsibilities and when administration will be performed on the switch. Complete the worksheets that will be needed for installation.

Recording Channel Mapping and MDNs

Fill in the worksheet for channel mapping and MDN test ([Table 2-3](#)). You will need this information to administer the Hunt Group Translation window (see [“Setting the Hunt Group Translations”](#) in [Chapter 9, “Lucent Intuity Administration for Centrex Switch Integration”](#)).

If you are:

- Installing a new Lucent INTUITY system or adding the feature to an existing system and changing the channel mapping (assigning different channels to Lucent INTUITY ports), fill in the worksheet with information from the CO.
- Adding the multiple hunt group feature to an existing system that will retain its existing channel mapping, use the windows on the Lucent INTUITY system to provide current information. Complete the following procedure to get the information from the windows.

1. Start at the Lucent INTUITY System Main Menu ([Figure 9-1](#)) and select

> Voice System Administration

> Voice Equipment

The system displays the Voice Equipment window ([Figure 2-1](#)).

Voice Equipment							
Card 0 is IVC6		O.S.Index: 0		Function: TipRing			
		State: Inseru					
CD.PT	CHN	STATE	STATE-CHNG-TIME	SERVICE-NAME	PHONE	GROUP	TYPE
0.0	0	Inseru	Jan 09 11:17:29	*DNIS_SVC	3001	2	IVC6
0.1	1	Inseru	Jan 09 11:17:29	*DNIS_SVC	3002	2	IVC6
0.2	2	Inseru	Jan 09 11:17:29	*DNIS_SVC	3003	2	IVC6
0.3	3	Inseru	Jan 09 11:17:29	*DNIS_SVC	3004	2	IVC6
0.4	4	Inseru	Jan 09 11:17:29	*DNIS_SVC	3005	2	IVC6
0.5	5	Inseru	Jan 09 11:17:29	*DNIS_SVC	3006	2	IVC6
Card 1 is IVC6		O.S.Index: 1		Function: TipRing			
		State: Inseru					

Figure 2-1. Voice Equipment Window

2. Record the telephone number for the Lucent INTUITY system card and port in the PHONE field on the worksheet ([Table 2-3](#)). See the following example ([Figure 2-2](#)) if necessary.
3. When you finish recording the channel numbers, press **F6** (CANCEL) twice to return to the Lucent INTUITY Main menu.
4. Use information from the CO to record the MDN and LTN for each channel.

Worksheet for Channel Mapping and MDN Test

The worksheet ([Table 2-3](#)) contains the following fields.

- CD.PT is the voice card port.
- CHN is the channel number on the Lucent INTUITY system. For example, the following listing indicates the 11th channel connected to the system through the second Tip/Ring circuit card, fifth port on the card:

CD.PT 1.4 CHN 10
- PHONE is the telephone number associated with the MDN and LTN.

NOTE:
The switch numbers its channels starting with 1. The Lucent INTUITY system starts with 00.

For channels not in use, leave all field blank.

Table 2-3. Worksheet for Channel Mapping and MDN Test

MDN	LTN	CD.PT	CHN	PHONE	MDN	LTN	CD.PT	CHN	PHONE
		0.0	00				5.2	32	
		0.1	01				5.3	33	
		0.2	02				5.4	34	
		0.3	03				5.5	35	
		0.4	04				6.0	36	
		0.5	05				6.1	37	
		1.0	06				6.2	38	
		1.1	07				6.3	39	
		1.2	08				6.4	40	
		1.3	09				6.5	41	
		1.4	10				7.0	42	
		1.5	11				7.1	43	
		2.0	12				7.2	44	
		2.1	13				7.3	45	
		2.2	14				7.4	46	
		2.3	15				7.5	47	
		2.4	16				8.0	48	
		2.5	17				8.1	49	
		3.0	18				8.2	50	
		3.1	19				8.3	51	
		3.2	20				8.4	52	
		3.3	21				8.5	53	
		3.4	22				9.0	54	
		3.5	23				9.1	55	
		4.0	24				9.2	56	
		4.1	25				9.3	57	
		4.2	26				9.4	58	
		4.3	27				9.5	59	
		4.4	28				10.0	60	
		4.5	29				10.1	61	
		5.0	30				10.2	62	
		5.1	31				10.3	63	

Example

In this example ([Figure 2-2](#)), 3 hunt groups are configured for 16 Lucent INTUITY channels, 00 through 15. MDN 200 has 6 hunt members, MDN 311 has 4 hunt members, and MDN 612 has 6 hunt members.

NOTE:
Each system usually has only one MDN. As a result, your worksheet may be much simpler.

MDN	LTN	CD.PT	CHN	PHONE
200	1	0.0	00	6427
200	2	0.1	01	6428
200	3	0.2	02	6429
311	4	0.3	03	5900
311	5	0.4	04	5901
311	9	0.5	05	5903
311	10	1.0	06	5904
200	27	1.1	07	6430
200	28	1.2	08	6432
200	29	1.3	09	6433
612	1	1.4	10	8856
612	2	1.5	11	8857
612	3	2.0	12	8858
612	9	2.1	13	8892
612	10	2.2	14	8893
612	11	2.3	15	8894

Figure 2-2. Example of a Completed Worksheet for Channel Mapping and MDN Test

Determining the Telephone Numbers for Test

NOTE:
If the administration has not been done on the switch at the time of installation, the integration cannot be tested.

Determine the telephone numbers for the acceptance test and fill in the following worksheet ([Table 2-4](#)). There should be one telephone number for each MDN.

Table 2-4. Worksheet for Extension Numbers for Test

Telephone Number Type	Associated MDN	Telephone Number(s)
Message retrieval numbers		
Call answer numbers		
Automated Attendant numbers		
Others		

Planning for the Lucent INTUITY Lodging Application

Calls to the Lucent INTUITY Lodging application can be handled in any of several ways that impact the hunt group planning and administration for the integration.

- A Lodging-only system can be administered as a single hunt group.
See the information on single hunt group, single usage in [“Planning for Hunt Groups”](#) above.
- On a system with INTUITY AUDIX coresident with Lucent INTUITY Lodging (or another application), a single hunt group is administered along with a phantom number for the coresident application. For this configuration, you must administer the phantom numbers to be forwarded to the hunt group.
See the information on single hunt group, shared usage in [“Planning for Hunt Groups”](#) above.
- On a system with multiple hunt groups, one hunt group can be administered for the Lodging application. All calls to the Lodging start hunt number go to the voice channels in the Lodging hunt group.

In all cases you must:

1. Administer the switch to assign call forwarding for each guest’s extension to the associated Lucent INTUITY system hunt group number.
2. Provide the appropriate message retrieval numbers to the system subscribers.

Cut to Service

A cut to service of the INTUITY Lodging application amounts to changing the call forwarding path for each guest extension to the Lucent INTUITY system hunt group. The associated system must be completely installed before you cut the INTUITY Lodging application into service. Furthermore, all Lucent INTUITY system initial administration, associated switch administration, and acceptance tests must be completed. Some switching systems make it possible to group these extensions as a set, allowing the call forwarding path to be changed simultaneously. Most switching systems permit changing the call forwarding path for guest extensions one extension at a time. You may use either method.

Planning for Lucent INTUITY Administration

Fill in the following worksheet ([Table 2-5](#)) with the parameters necessary to administer the fields in the Lucent INTUITY windows for switch integration. For full information on these fields, see the references in [Table 2-5](#).

Table 2-5. Worksheet for Lucent INTUITY Administration Windows




Window	Fields
Serial Interface	Data Bits: (default=7) Stop Bit(s): (default=1) Start Bit(s): (default=1) Baud Rate: (default=1200) Parity: (default=E) Flow Control [Y/N]: (default=N)
For full information, see “Setting the Serial Interface Parameters” in Chapter 9, “Lucent Intuity Administration for Centrex Switch Integration”	Serial Ports: 1. 2. 3. 4. 5. 6. 7. 8.
	 NOTE: The defaults provided on the Serial Interface window will be correct for most integrations.

Table 2-5. Worksheet for Lucent INTUITY Administration Windows — Continued

Window	Fields		
Device Assignment	Link Test [Y/N]:		
	Link Test Interval (seconds):		
For full information, see “Setting the MWI Device Assignments” in Chapter 9, “Lucent Intuity Administration for Centrex Switch Integration”	 NOTE: For Nortel DMS-100 and SL-100 switches, the link test field must be set to n (no). The Link Test Interval and Link Test Number fields are not used.		
		Switch Number	Device ID
			Link Test Number
	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
	9.		
	10.		
	11.		
	12.		
	13.		
	14.		
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		

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Table 2-5. Worksheet for Lucent INTUITY Administration Windows — Continued

Window	Fields
MWI Parameters For full information, see “Setting MWI Parameters” in Chapter 9, “Lucent Intuity Administration for Centrex Switch Integration”	MWI On Prefix: MWI On Suffix: MWI Off Prefix: MWI Off Suffix: MWI Updates [Y/N]: Background Refresh: Background Interval: Background Updates: Broadcast Interval: Broadcast Updates: Block Start Time: Block End Time:
Hunt Group Translation For full information, see “Setting the Hunt Group Translations” in Chapter 2, “Planning for Centrex Switch Integration”	 NOTE: Use the worksheet for channel mapping and MDN test (Table 2-3).

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Table 2-5. Worksheet for Lucent INTUITY Administration Windows — Continued

Window	Fields						
<div>Dial Plan Translation</div> <div>For full information, see “Setting the Dial Plan Translations” in Chapter 9, “Lucent Intuity Administration for Centrex Switch Integration”</div>	INTUITY Extension Length:						
	Switch Network Access Code:						
		Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch Number	Remote [Y/N]
	1.						
	2.						
	3.						
	4.						
	5.						
	6.						
	7.						
	8.						
	9.						
	10.						
	11.						
	12.						
	13.						
	14.						
	15.						
	16.						
	17.						
	18.						
	19.						
	20.						
	21.						
	22.						
	23.						
	24.						
	25.						
	26.						
	27.						

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Table 2-5. Worksheet for Lucent INTUITY Administration Windows — Continued

Window	Fields						
Dial Plan Translation (Continued)		Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch Prefix	Remote [Y/N]
	28.						
	29.						
	30.						
	31.						
	32.						
	33.						
	34.						
	35.						
	36.						
	37.						
	38.						
	39.						
	40.						
	41.						
	42.						
	43.						
	44.						
	45.						
	46.						
	47.						
	48.						
	49.						
	50.						