

Topic: Advanced Organizer
Storyboard number: 07-03-00-000C
Screen type: Content

Layout: 5
Level:

What content does this section cover?

In the section Network Structure, you will learn about:

- The local loop
- Functional Groups
- Reference Points

ICON

Screen graphics for 07-03-00-000C:

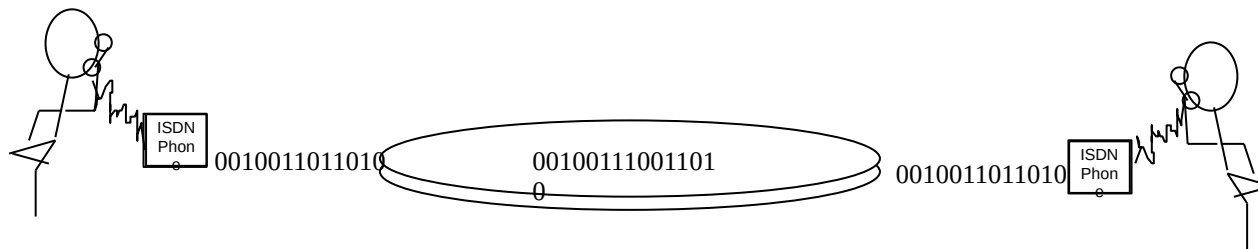
Component	Library	Description/notes	Clickable/ caption
Icon		Network Structure Icon	

Topic: Local Loop
Storyboard number: 07-03-01-000C
Screen type: Content

Layout: 1
Level:

What is the Local Loop?

Once the technology for converting voice signals for digital transmission and switching developed, a completely digital communications network became possible.



Screen graphics for 07-03-01-000C:

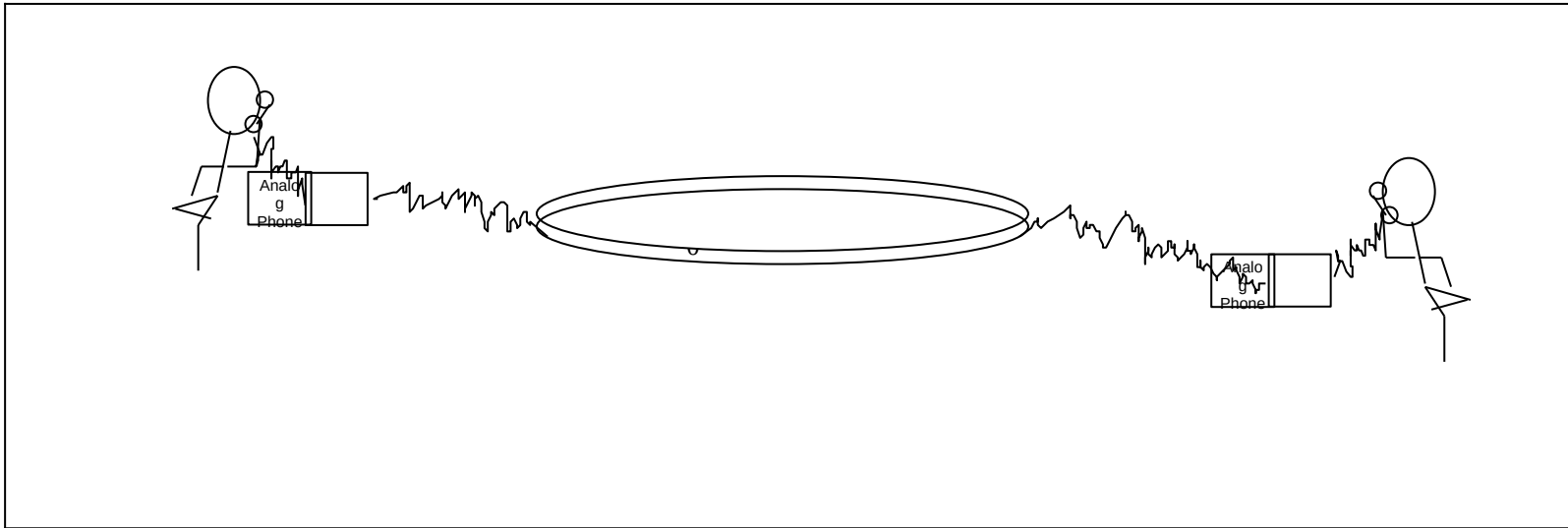
Component	Library	Description/notes	Clickable/ caption
*ISDN Phone		ISDN telephone with an analog signal, rather than a wire, connecting the handset to the telephone.	
Figures		Two persons on telephones	
Digital Network		Digital network with a digital signal connecting to it from the ISDN telephones and passing through the network	

Topic: Local Loop
Storyboard number: 07-03-00-005C
Screen type: Content

Layout: 1
Level:

What is the Local Loop?

Even though the PSTN was designed to transmit analog signals, parts of the network increasingly use digital technology to complete that function.



Screen graphics for 07-03-01-005C:

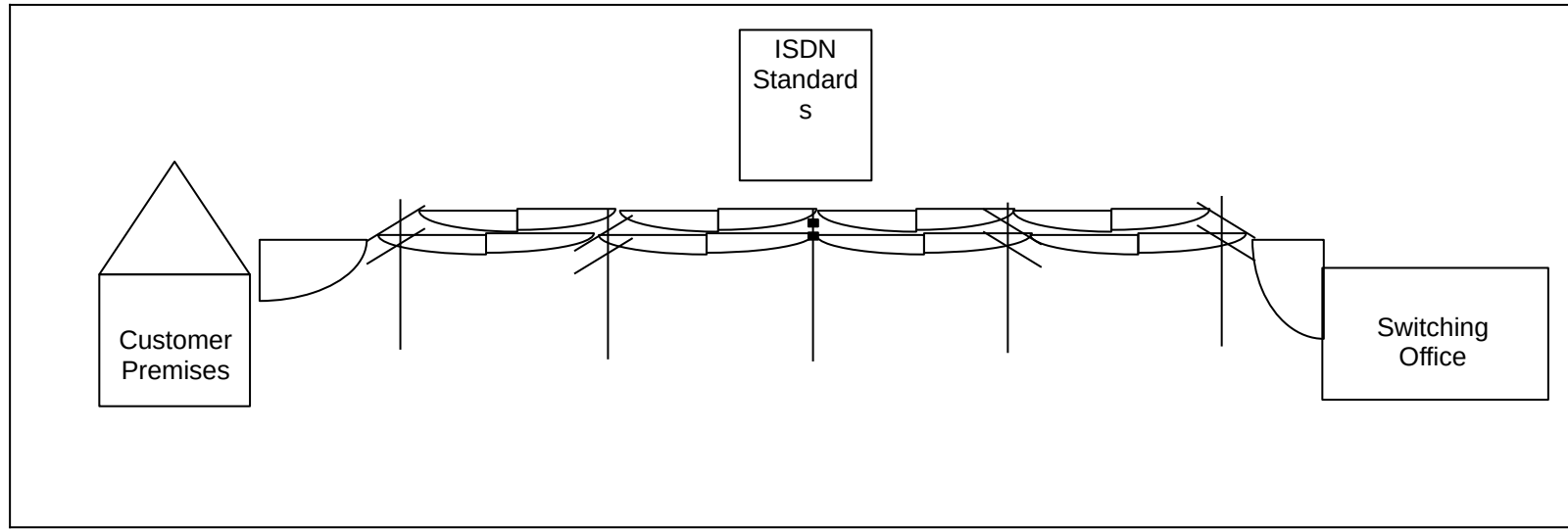
Component	Library	Description/notes	Clickable/ caption
*Analog Phone		Analog phone connected to the handset and the PSTN with an analog signal	
Figures		Use same figures as in previous frame	
Network		This is a standard PSTN network, not a digital network.	

Topic: Local Loop
Storyboard number: 07-03-01-010C
Screen type: Content

Layout: 1
Level:

What is the Local Loop?

ISDN is a set of standards for implementing an integrated local digital network. ISDN standards address only the customer's local loop access to the PSTN.



Screen graphics for 07-03-01-010C:

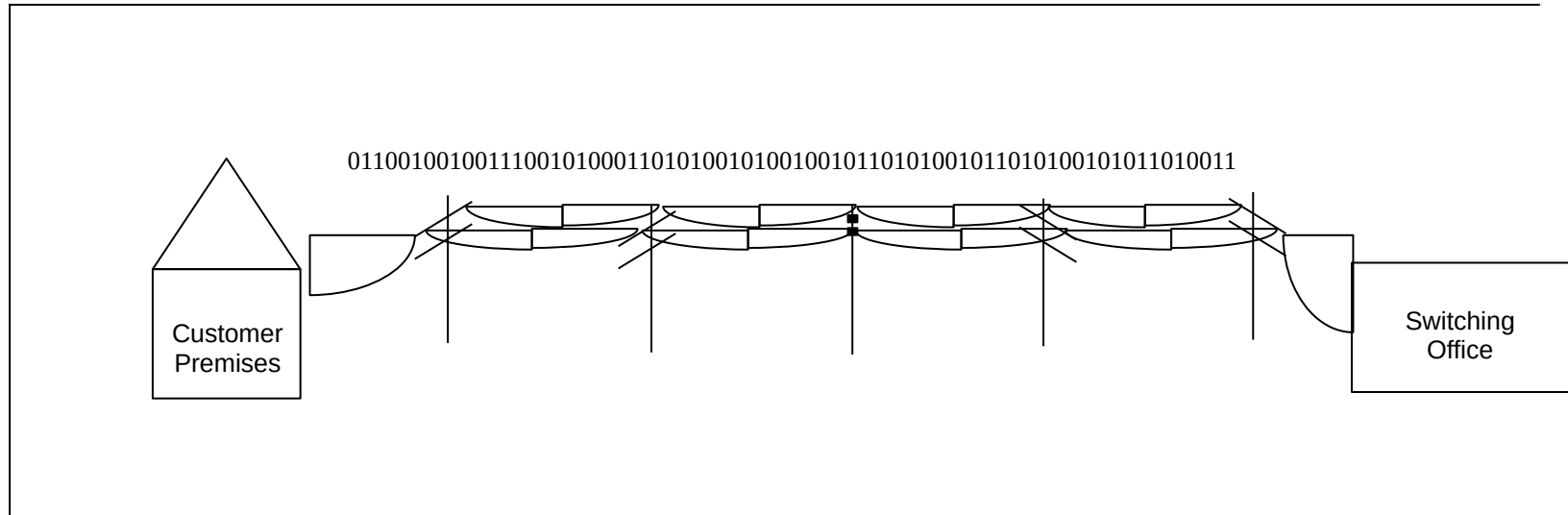
Component	Library	Description/notes	Clickable/ caption
*Customer Premises		Home or business. If you have something already made that will work here, that's fine.	
Switch office			
*Telephone poles		I've used these a couple of times in this lesson. I believe section 4 will use them also. I've tried to keep the perspectives the same in each situation I've used them.	
Standards Manual		Same graphic as from section 2.	

Topic: Local Loop
Storyboard number: 07-03-01-015C
Screen type: Content

Layout: 1
Level:

What is the Local Loop?

The local loop is that part of the network that runs between the telephone company's switching office and the customer's home or business. ISDN makes it possible to include the local loop in the overall digital network.



Screen graphics for 07-03-01-015C:

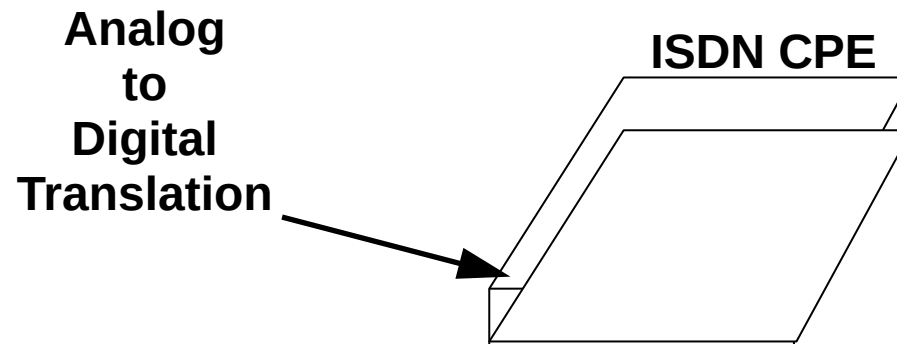
Component	Library	Description/notes	Clickable/ caption
Same as previous		Use the same graphics as on the previous frame. Exchange the standards manual for a line of digital code.	

Topic: Local Loop
Storyboard number: 07-03-01-020C
Screen type: Content

Layout: 1
Level:

What is the Local Loop?

ISDN takes analog to digital translation out of the network and makes it a part of the CPE so that the network has end-to-end digital connectivity. The signal remains digital throughout the entire network structure.



Screen graphics for 07-03-01-020C:

Component	Library	Description/notes	Clickable/ caption
*CPE		ISDN phone. Corner is cut away and shows a box inside.	

Topic: Local Loop
Storyboard number: 07-03-01-025E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

Where does ISDN extend digital technology?

- Analog CPE
- PSTN
- Local Loop
- Functional Groups

Correct answer: Local Loop

Feedback for 1st incorrect answer:

HINT: Between the customer's premises and the switch office. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, ISDN extends digital technology to the local loop to enable end-to-end digital connections across the entire network.

Feedback for correct answer:

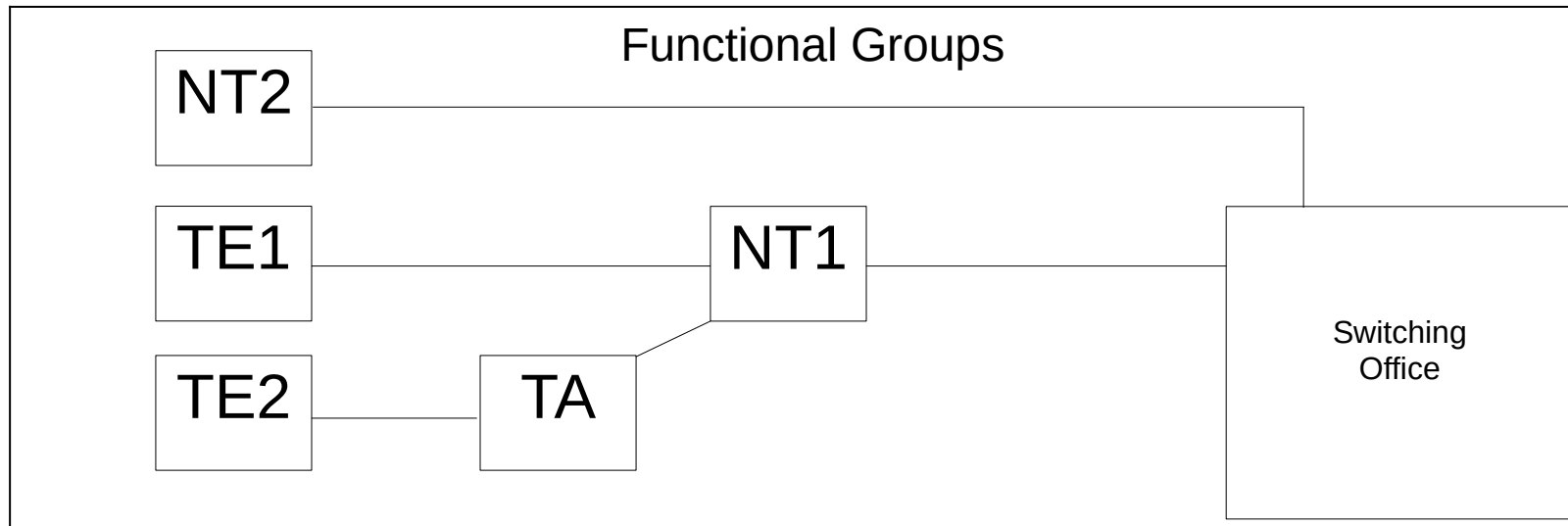
That's right. ISDN extends digital technology to the local loop to enable end-to-end digital connections across the entire network.

Topic: Functional Groups
 Storyboard number: 07-03-02-005C
 Screen type: Content

Layout: 1
 Level:

What are Functional Groups?

Part of the purpose of standards is to create a common language. The ITU developed functional groups and reference points in order to have a common language for the parts of the PSTN that make up the local loop.



Screen graphics for 07-03-02-005C:

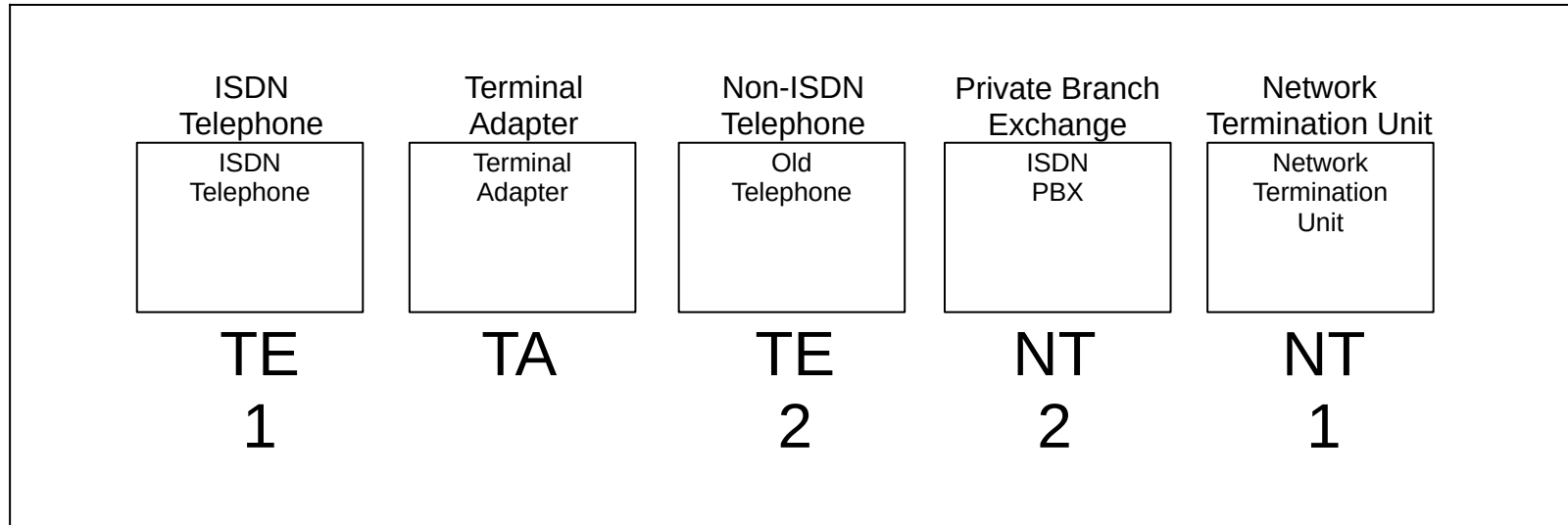
Component	Library	Description/notes	Clickable/ caption
*Diagram		This is a box and line diagram just as shown.	

Topic: Functional Groups
Storyboard number: 07-03-02-010C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

The ITU defines five functional groups which are necessary to create a network.



Screen graphics for 07-03-02-010C:

Component	Library	Description/notes	Clickable/ caption
ISDN Phone		ISDN Telephone	
Terminal Adapter		Terminal Adapter	
Non-ISDN Phone		Rotary Dial Telephone	
ISDN PBX		ISDN PBX Station	
Network Termination Unit		NT1 connection device	
		<i>All items previously request in baseline graphics request list submitted 3/6/97.</i>	

Topic: Functional Groups
Storyboard number: 07-03-02-015C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Network terminating equipment provides electrical power and a receptacle connect CPE to the network. The most simple network terminator offers the customer a connector in which to plug the terminal device.

**NT
1**



Provides power and connection for terminal devices.

Screen graphics for 07-03-02-015C:

Component	Library	Description/notes	Clickable/ caption
NT1		Commercial NT1 connection device.	

Topic: Functional Groups
Storyboard number: 07-03-02-020C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Terminal devices which have switching or line-concentration capabilities have a separate functional group designation. This type of equipment contains the NT2 functional group within the device itself.

**NT
2**

ISDN PBX

Also provides switching and line-concentration capabilities.

Screen graphics for 07-03-02-020C:

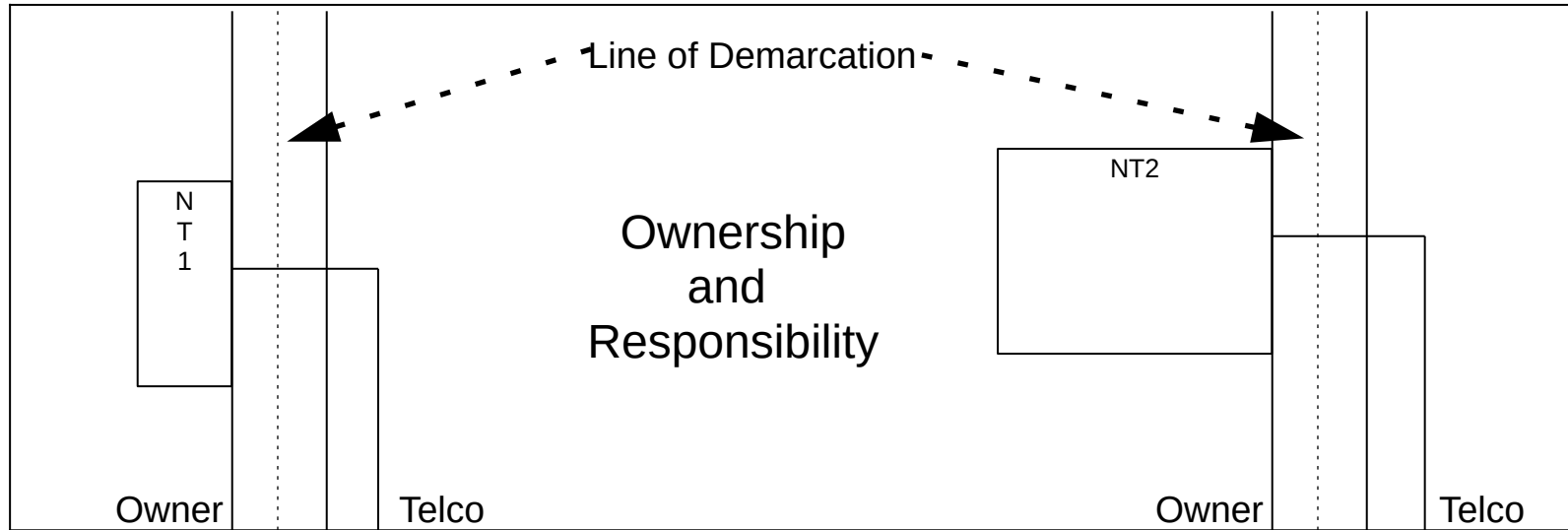
Component	Library	Description/notes	Clickable/ caption
ISDN PBX		ISDN PBX station.	

Topic: Functional Groups
Storyboard number: 07-03-02-025C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

The network terminating functional groups serve in addition to connecting CPE to the digital network. They demark the point of equipment responsibility and ownership.



Screen graphics for 07-03-02-025C:

Component	Library	Description/notes	Clickable/ caption
Diagram		Line and box diagram as shown.	

Topic: Functional Groups
Storyboard number: 07-03-02-030E
Screen type: Exercise

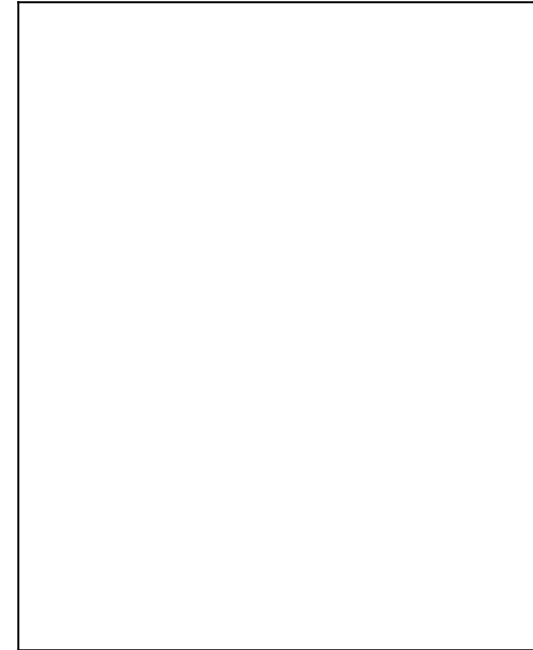
Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

What capabilities might an NT2 terminal device have in addition to providing a power source?

- Internet service provision
- Line concentration
- Connector reception
- Group call functions



Correct answer: Line concentration

Feedback for 1st incorrect answer:

HINT: It can facilitate multiple lines and private networks. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is line concentration. The functional group NT2 may have switching and/or line-concentration capabilities as with a **Public Branch Exchange**.

Feedback for correct answer:

That's right. The functional group NT2 may have switching and/or line-concentration capabilities as with a **Public Branch Exchange**.

Topic: Functional Groups
Storyboard number: 07-03-02-035E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

Network terminating functional groups serve what other purpose besides providing network functionality?

- Voice and data communication
- Switching and line-concentration capabilities
- Ownership and responsibility demarcation
- CPE standards differentiation

Correct answer:

Feedback for 1st incorrect answer:

HINT: It's a boundary of a sort.
Please try again.

Feedback for 2nd incorrect answer:

Incorrect, Network terminating functional groups demark equipment ownership and responsibility between the customer and the telco.

Feedback for correct answer:

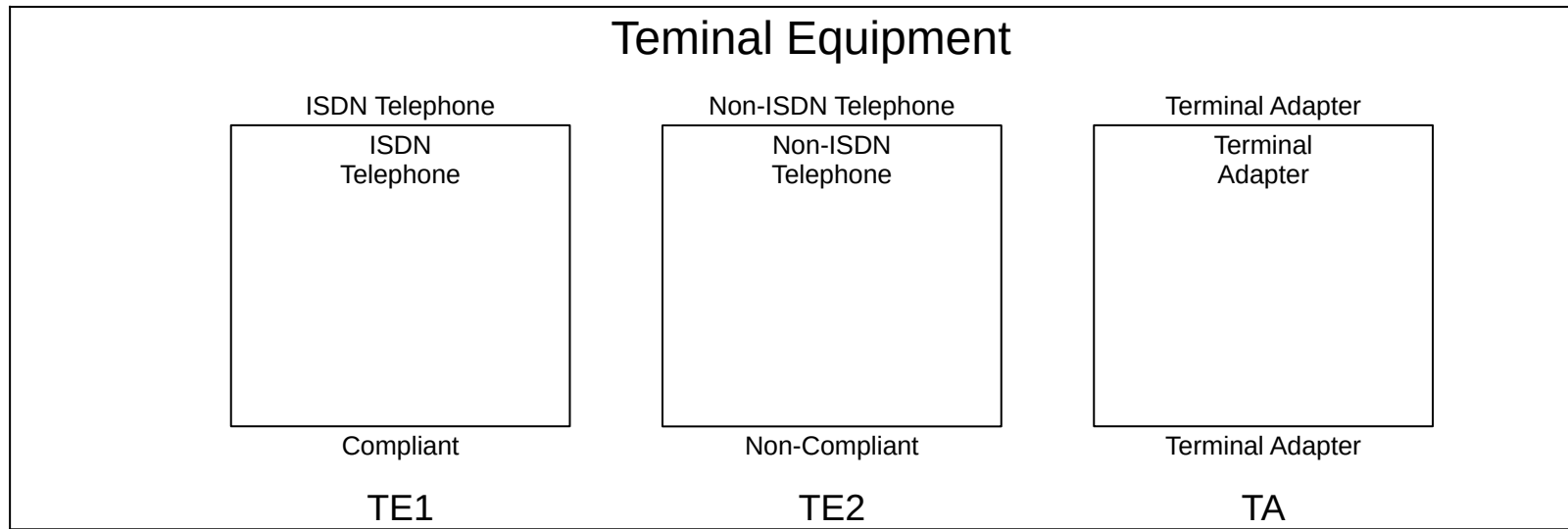
That's right. Network terminating functional groups demark equipment ownership and responsibility between the customer and the telco.

Topic: Functional Groups
Storyboard number: 07-03-02-040C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Terminal equipment is the customer-owned device used to communicate across the network. ISDN standards define three types of terminal equipment—compliant, non-compliant, and terminal adapters.



Screen graphics for 07-03-02-040C:

Component	Library	Description/notes	Clickable/ caption
TE1		ISDN Telephone	
TE2		Non-ISDN Telephone	
TA		ISDN Terminal Adapter	

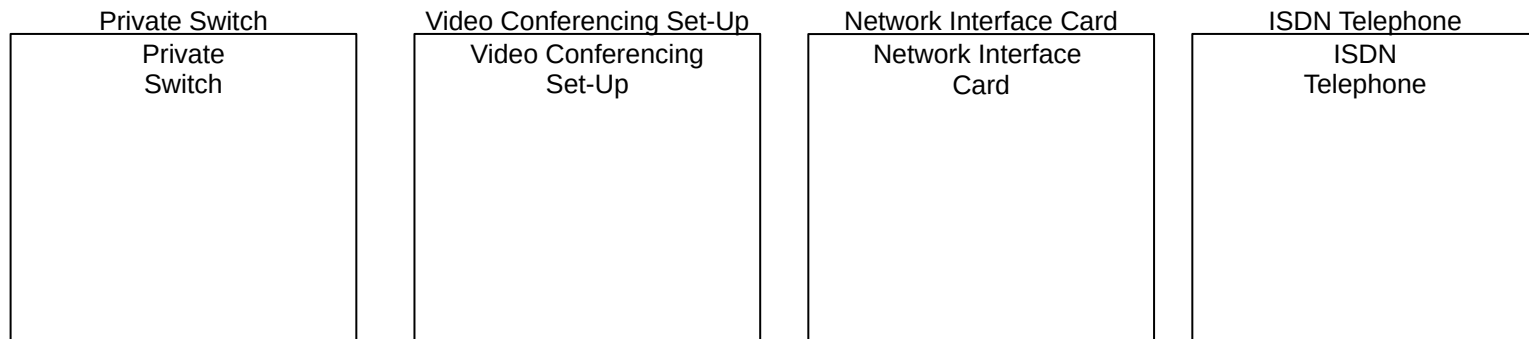
Topic: Functional Groups
Storyboard number: 07-03-02-045C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

There's more than just telephones in the ISDN compliant products market. New equipment for video conferencing, local area computer networks, and private ISDN networks shows up on the market everyday.

TE1



Screen graphics for 07-03-02-045C:

Component	Library	Description/notes	Clickable/ caption
ISDN Telephone			
*Video Conf. Equip.		Video conference set up, Camera, monitor, other hardware	
*Network Card		Circuit board card with receptacles	
*Private Switch		Circuit board card	
		<i>Contact Kareta Johnson for examples of these pieces of equipment.</i>	

Topic: Functional Groups
Storyboard number: 07-03-02-050C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Terminal adapters connect the non-ISDN compliant computers and telephones we all use now to ISDN service lines.

TA

Terminal Adapters

Terminal Adapter
(One Type)

Terminal Adapter
(Another Type)

Screen graphics for 07-03-02-050C:

Component	Library	Description/notes	Clickable/ caption
Terminal Adapters		Two different types or brands of terminal adapters	

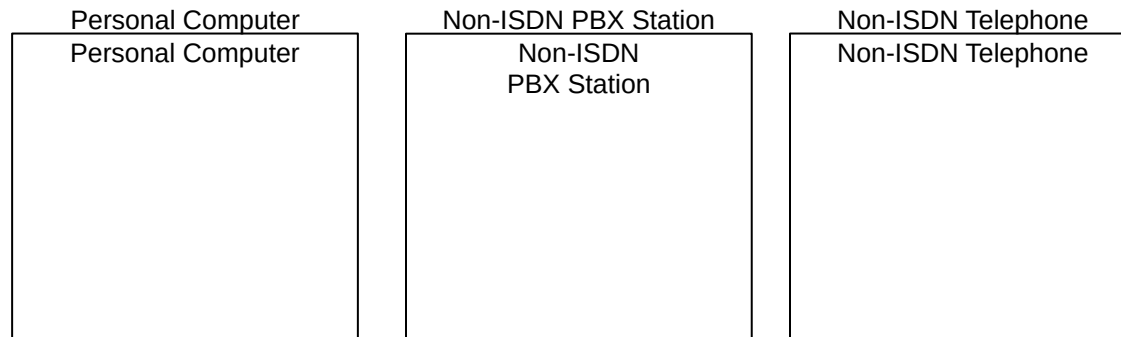
Topic: Functional Groups
Storyboard number: 07-03-02-055C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Non-compliant equipment is everything we used before ISDN came into existence, including digital telecommunications equipment that does not meet ISDN standards.

TE2



Screen graphics for 07-03-02-055C:

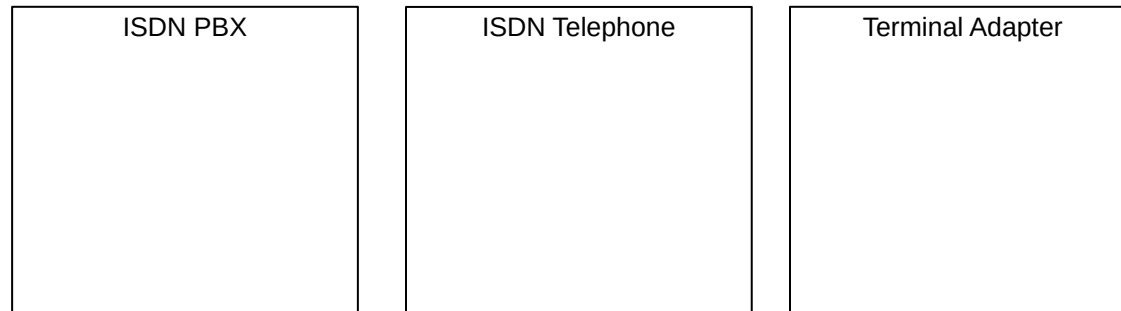
Component	Library	Description/notes	Clickable/ caption
Personal Computer		Regular personal computer	
*Non-ISDN PBX Station		A non-ISDN PBX, this can be analog or non-compliant digital.	
Non-ISDN Telephone			
		<i>Contact Kareta Johnson for examples of a non-ISDN PBX.</i>	

Topic: Functional Groups
Storyboard number: 07-03-02-060C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

NT1, NT2, TE1, TE2 and TA are the definitions the ITU developed to describe a network's structure. On paper these definitions are clear. Functional groups are less clear when you look at the actual products.



Screen graphics for 07-03-02-060C:

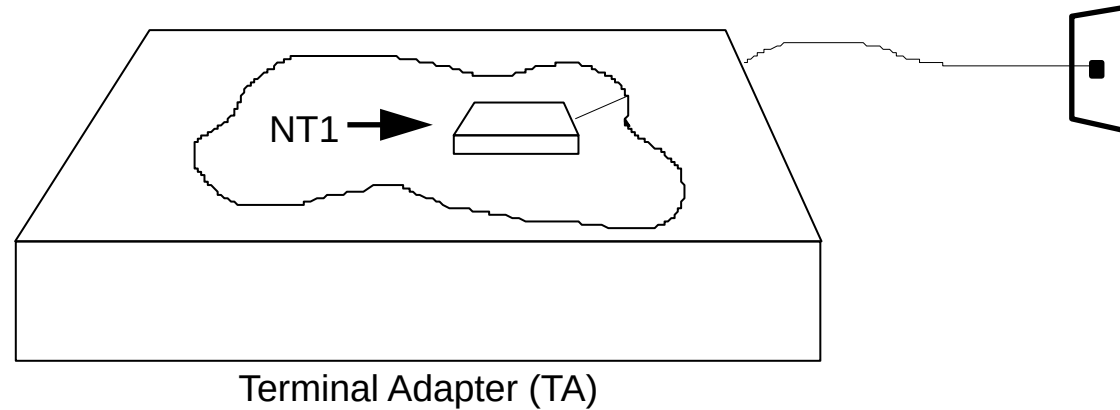
Component	Library	Description/notes	Clickable/ caption

Topic: Functional Groups
Storyboard number: 07-03-02-065C
Screen type: Content

Layout: 1
Level:

What are Functional Groups?

Manufacturers may create an TA with an NT1 built in or some other combination of functional groups that blurs the lines between them. Remember that functional groups is a part of the ISDN language.



Screen graphics for 07-03-02-065C:

Component	Library	Description/notes	Clickable/ caption
*Terminal Adapter		Terminal adapter with a section cut away showing a box inside.	

Topic: Functional Groups
Storyboard number: 07-03-02-070E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

What do functional groups describe?

- Network terminating equipment
- Terminal equipment
- Terminal adapters
- The network structure

Correct answer: The network structure

Feedback for 1st incorrect answer:

HINT: They are the building blocks of this structure. Please try again.

Feedback for 2nd incorrect answer:

Incorrect. Functional groups describe the network structure.

Feedback for correct answer:

That's right. Functional groups describe the network structure.

Topic: Functional Groups
Storyboard number: 07-03-02-075E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT
Click on the correct answer.

Click on the NT1.

- A
- B
- C

Correct answer: C

Feedback for 1st incorrect answer:

HINT: You would plug your ISDN telephone into this. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is C. A is an TE1 and B is an TA.

Feedback for correct answer:

That's right. A is an TE1 and B is an TA.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
A.		ISDN Telephone	
B.		Terminal Adapter	
C.		ISDN plug receptacle (NT1) An NT1 is not a wall plug. It is a circuit board either in a case or plug in style,	

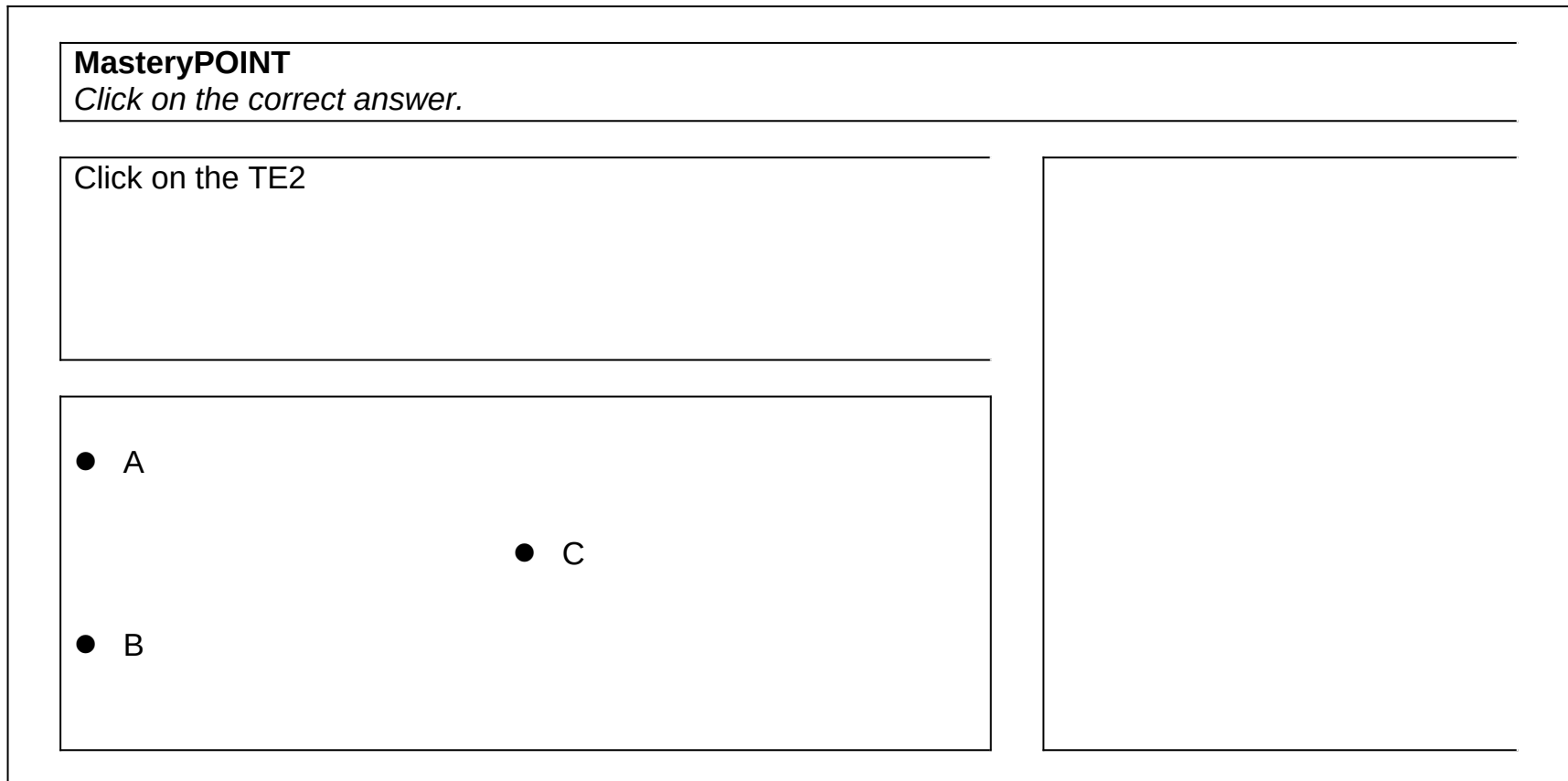
Topic: Functional Groups
Storyboard number: 07-03-02-080E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT
Click on the correct answer.

Click on the TE2

- A
- B
- C



Correct answer: B

Feedback for 1st incorrect answer:

HINT: You could not use this type of telephone over an ISDN line by itself. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is B. A is an NT2 and C is an TE1.

Feedback for correct answer:

That's right. A is an NT2 and C is an TE1.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
A.		ISDN PBX	
B.		Rotary Dial Telephone (A pink princess phone would be really cool.)	
C.		Voice / Data Terminal	

Topic: Functional Groups
Storyboard number: 07-03-02-085E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT
Click on the correct answer.

Click on the TE1.

- A
- B
- C

Correct answer: A

Feedback for 1st incorrect answer:

HINT: You could use this type of telephone over an ISDN line without a terminal adapter. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is A. B is an NT1 and C is an TE2.

Feedback for correct answer:

That's right. B is an NT1 and C is an TE2.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
A.		Video conferencing set up	
B.		ISDN plug receptacle See comment above.	
C.		Non-ISDN standard PBX Station	

Topic: Functional Groups
Storyboard number: 07-03-02-090E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT
Click on the correct answer.

Click on the NT2.

- A
- B
- C

Correct answer: A

Feedback for 1st incorrect answer:

HINT: This equipment provides switching and line concentration capabilities. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is A. B is an TE2 and C is an TE1.

Feedback for correct answer:

That's right. B is an TE2 and C is an TE1.

Screen graphics:

Component	Library	Description/notes	Clickable/caption
A.		ISDN PBX Station	
B.		Princess Phone (or an ordinary rotary dial phone if you must)	
C.		ISDN Telephone	

Topic: Functional Groups
Storyboard number: 07-03-02-095E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT
Click on the correct answer.

Click on the TA.

- A
- B
- C

Correct answer:

Feedback for 1st incorrect answer:

HINT: An TA provides the analog to digital translation an TE2 needs. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is C. A and B are both an TE1.

Feedback for correct answer:

That's right. A and B are both an TE1.

Screen graphics:

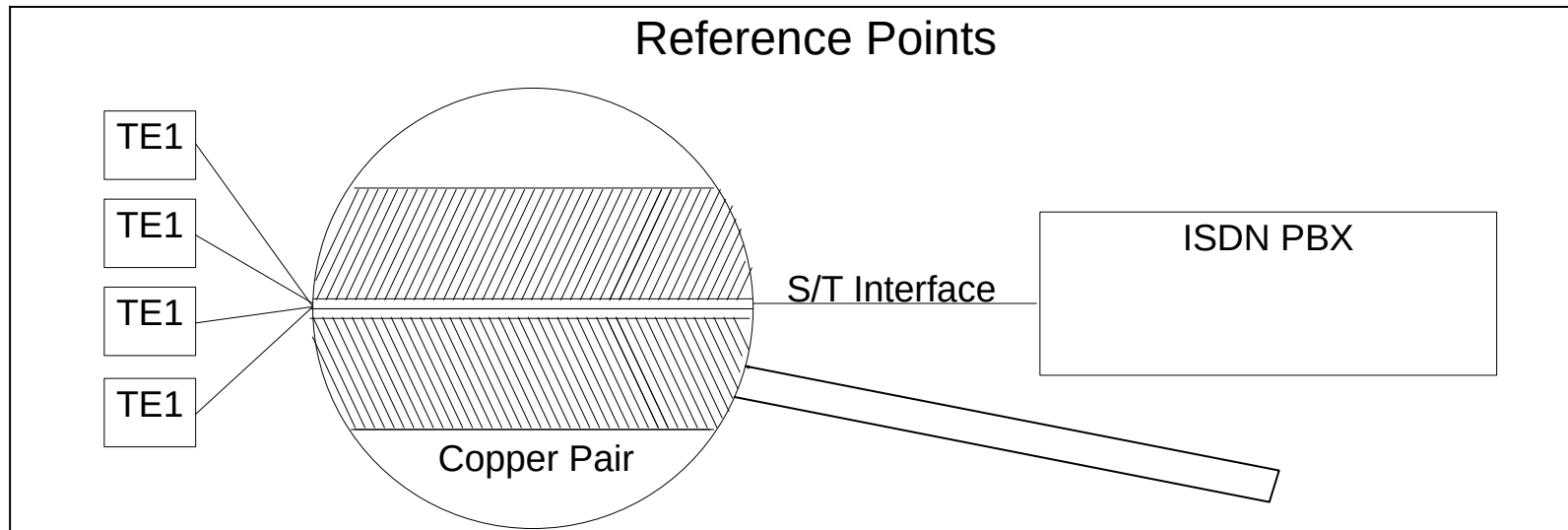
Component	Library	Description/notes	Clickable/ caption
A.		Network Interface Card	
B.		ISDN Private Switch	
C.		Terminal Adapter Be careful. This looks much like a Network Interface Card.	

Topic: Reference Points
Storyboard number: 07-03-03-000C
Screen type: Content

Layout: 1
Level:

What are Reference Points?

The ITU devised reference points to describe the protocol standards for the digital signal and the hardware between functional groups.



Screen graphics for 07-03-03-000C:

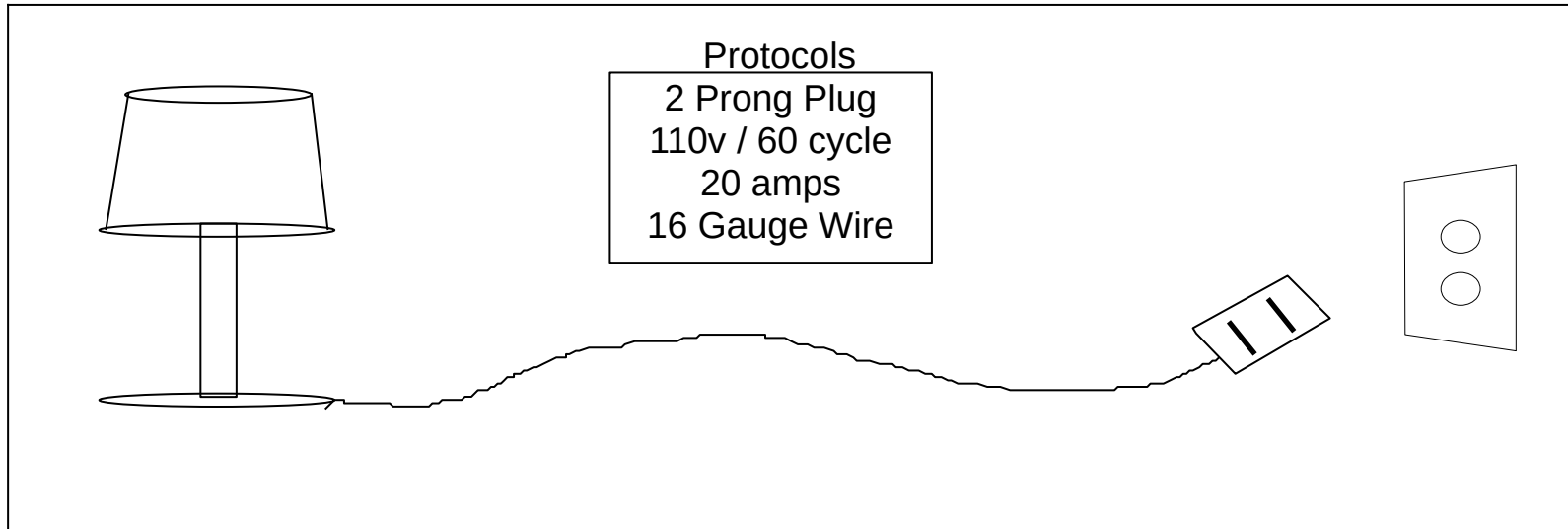
Component	Library	Description/notes	Clickable/ caption
Diagram		Line and box drawing of four TE1s connected to a NT2	
*Magnifying Glass		Magnifying glass with an enlargement of the wire that connects the TE1 units to the NT2	

Topic: Reference Points
Storyboard number: 07-03-03-005C
Screen type: Content

Layout: 1
Level:

What are Reference Points?

Standards govern how a manufacturer designs an electric plug so that it will be compatible with other manufacturer's wall sockets. A protocol describes the plug, the wire and the electricity that passes through them.



Screen graphics for 07-03-03-005C:

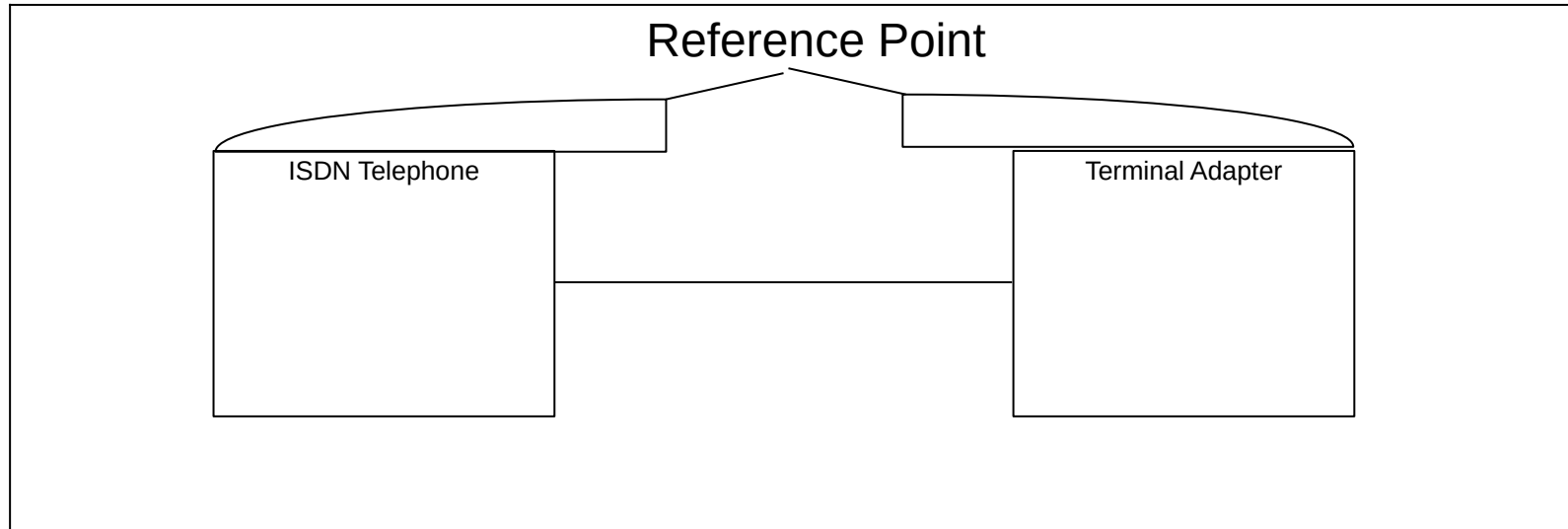
Component	Library	Description/notes	Clickable/ caption
Lamp		Plain old lamp	
Plug		Two prong electrical plug	
Wall outlet		Two receptacle wall electrical outlet	
		<i>These were all used in section 2.</i>	

Topic: Reference Points
Storyboard number: 07-03-03-010C
Screen type: Content

Layout: 1
Level:

What are Reference Points?

In ISDN, a protocol describes the digital signal, the wire that it travels through, and at what functional groups the signal and the cable start and end.



Screen graphics for 07-03-03-010C:

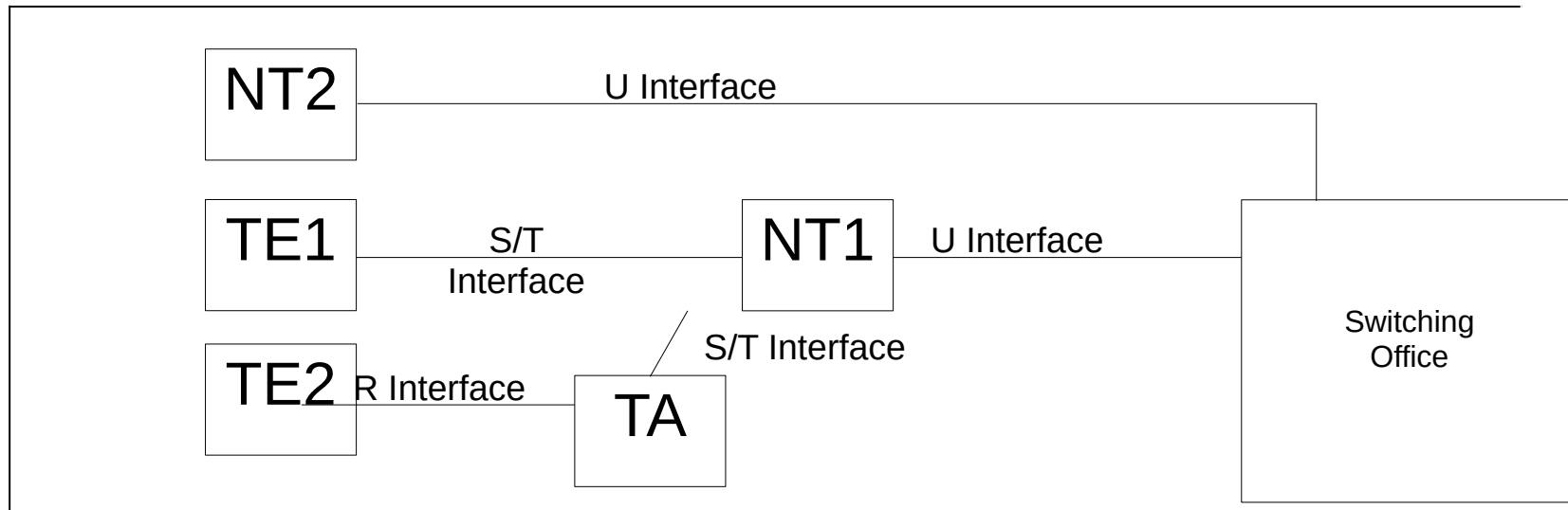
Component	Library	Description/notes	Clickable/caption

Topic: Reference Points
 Storyboard number: 07-03-03-015C
 Screen type: Content

Layout: 1
 Level:

What are Reference Points?

The ITU calls each reference point an interface. An interface is a bridge between two objects. Reference points bridge functional groups together and bridge CPE to the telco switch office.



Screen graphics for 07-03-03-015C:

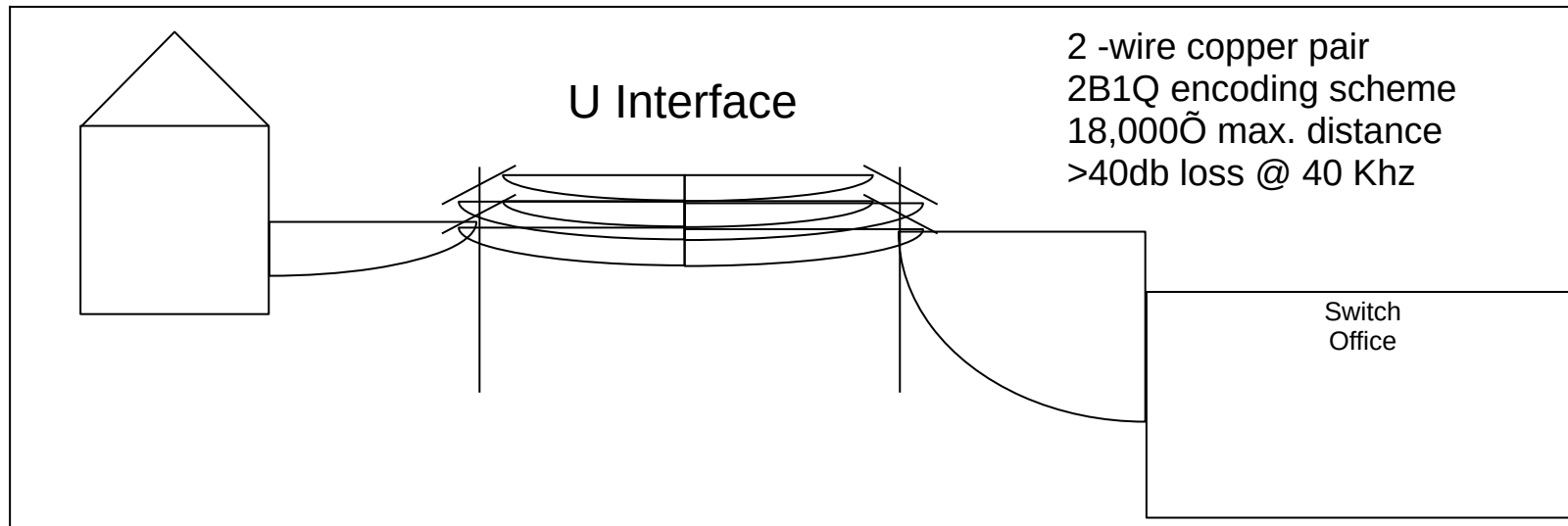
Component	Library	Description/notes	Clickable/ caption
Diagram		Line and box diagram as shown.	

Topic: Reference Points
Storyboard number: 07-03-03-020C
Screen type: Content

Layout: 1
Level:

What are Reference Points?

For example, the U Interface is the bridge between the telco switch office and the customers NT1 functional group. The list below shows some of the protocol standards for the U Interface. You won't be tested on these protocol specifications.



Screen graphics for 07-03-03-020C:

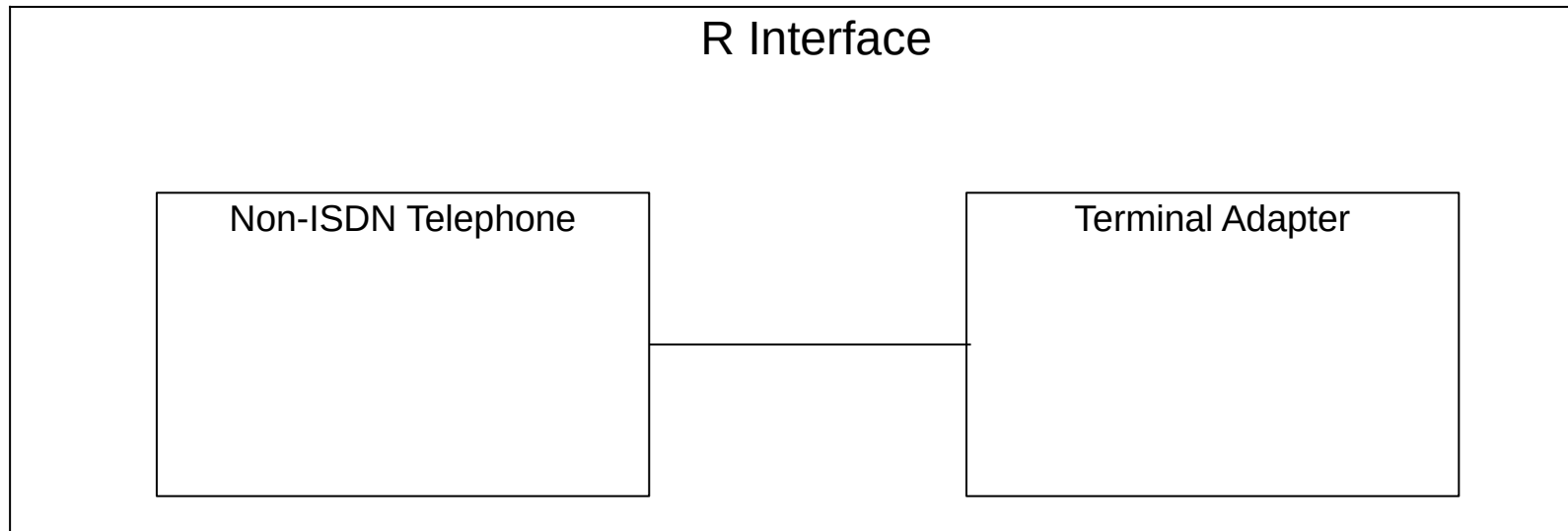
Component	Library	Description/notes	Clickable/ caption
Customer Premises			
Telephone poles			
Switch office			

Topic: Reference Points
Storyboard number: 07-03-03-025C
Screen type: Content

Layout: 1
Level:

What are Reference Points?

Another reference point is the R Interface. The R Interface exists only with non-ISDN compliant devices that require a terminal adapter. The R Interface is between the TE2 and the TA functional groups.



Screen graphics for 07-03-03-025C:

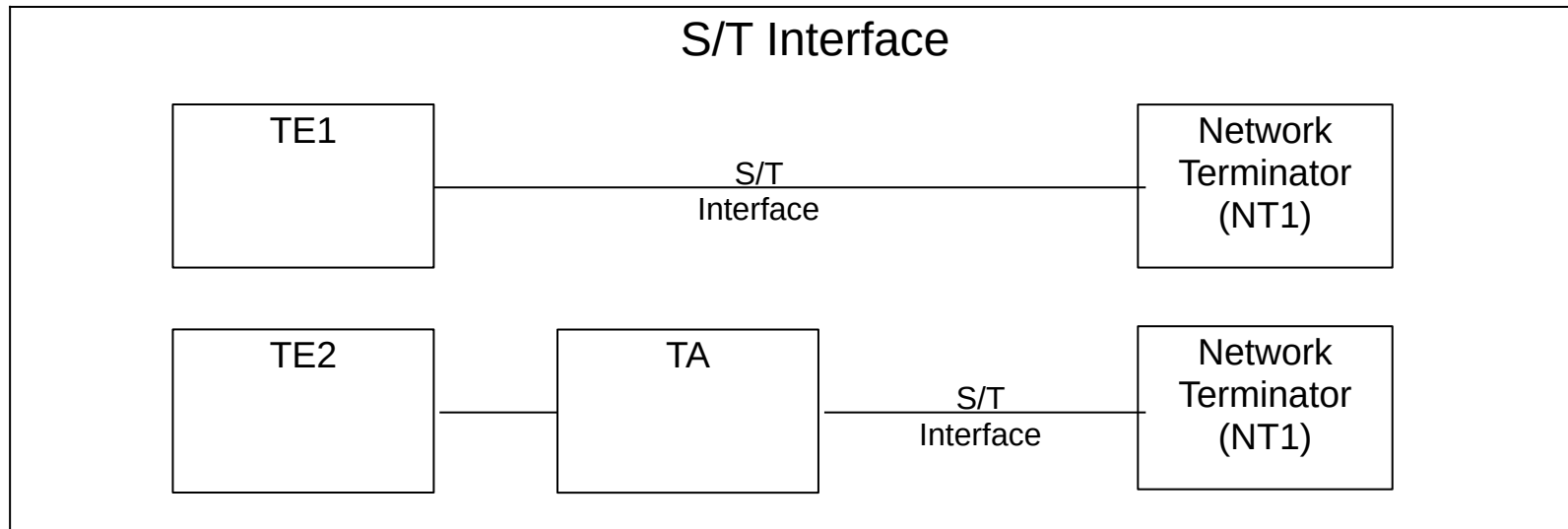
Component	Library	Description/notes	Clickable/ caption

Topic: Reference Points
 Storyboard number: 07-03-03-030C
 Screen type: Content

Layout: 1
 Level:

What are Reference Points?

The final reference point is the S/T Interface. The S/T Interface exist in all device configurations. The S/T Interface is between the NT1 functional group and either the TE1 or TA functional groups, depending on the devices being used.



Screen graphics for 07-03-03-030C:

Component	Library	Description/notes	Clickable/ caption
Diagram		Box and line diagram as shown.	

Topic: Reference Points
Storyboard number: 07-03-03-035E
Screen type: Exercise

Layout: 5
Level:

MasteryPOINT

Click on the correct answer.

ISDN protocol standards for reference points describe digital signal, the wire that it travels through, and at what functional groups the signal and the cable starts and ends in the customer's home.

- True
- False

Correct answer:

Feedback for incorrect answer:

Incorrect. Protocol standards apply to the reference points in the customer's home and to the local loop.

Feedback for correct answer:

That's right. Protocol standards apply to the reference points in the customer's home and to the local loop.

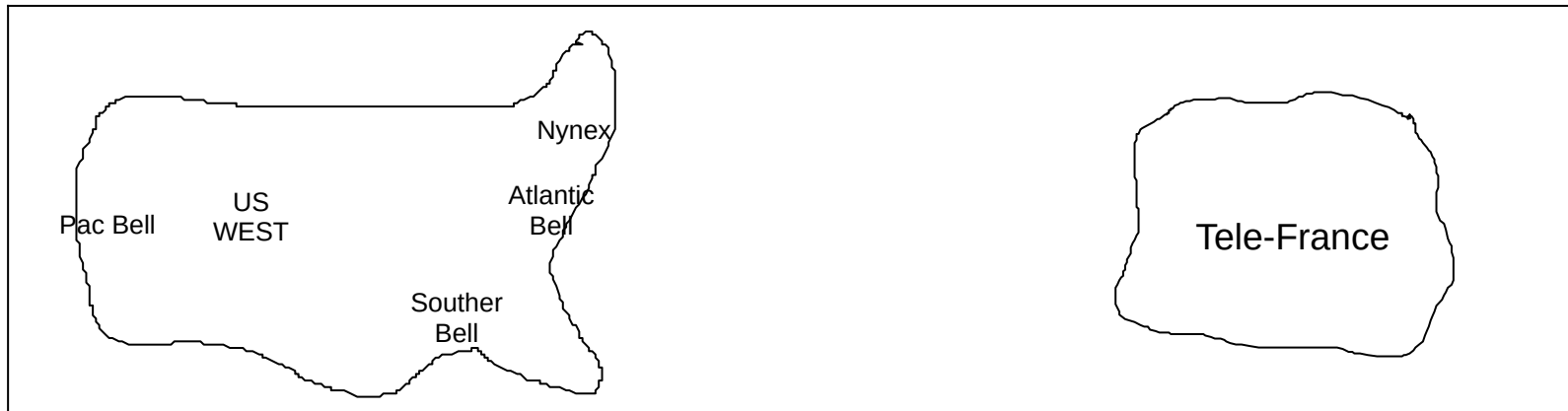
Topic: Reference Points
Storyboard number: 07-03-03-040C
Screen type: Content

Layout: 2
Level:

What are Reference Points?

International ISDN standards describe the R Interface and the S/T Interface. The United States adds the U Interface reference point to ensure local loop compatibility with CPE.

Outside of the United States, telephone companies are government owned which ensures national standardization of the local loop.



Screen graphics for 07-03-03-040C:

Component	Library	Description/notes	Clickable/ caption
*Map - US		Map of the United States color coded showing all of the telephone companies and the areas they serve	
*Map - France		Map of France with the name of France's national telephone company in the center.	

Topic: Reference Points
Storyboard number: 07-03-03-045E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

What does "Interface" mean?

- To speak with a colleague
- To put a plug in a socket
- To physically connect two objects
- To bisect a circle

Correct answer: To physically connect two objects

Feedback for 1st incorrect answer:

HINT: You might also call a bridge. Please try again.

Feedback for 2nd incorrect answer:

Incorrect. Interface means to physically connect two objects. A reference point is called an interface because it bridges two functional groups.

Feedback for correct answer:

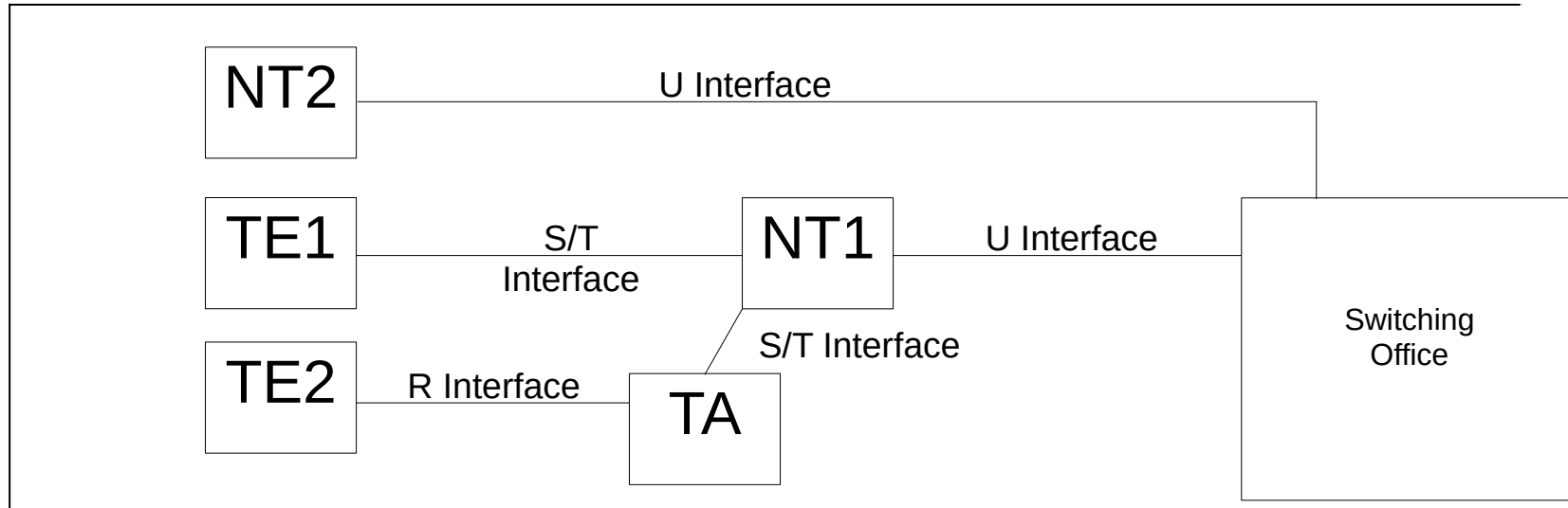
That's right. A reference point is called an interface because it bridges two functional groups.

Topic: Reference Points
 Storyboard number: 07-03-03-050C
 Screen type: Content

Layout: 1
 Level:

What are Reference Points?

Functional groups describe the building blocks of the network structure and the functionality they provide. Reference points describe the ISDN protocol standards for the bridges between the functional groups.



Screen graphics for 07-03-03-050C:

Component	Library	Description/notes	Clickable/ caption
Diagram		Line and box diagram as shown.	

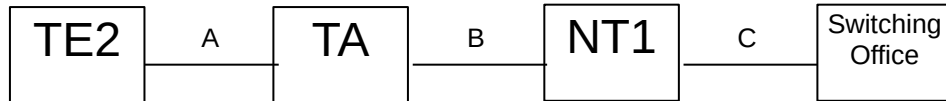
Topic: Reference Points
Storyboard number: 07-03-03-055E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT

Click on the correct answer.

Click on the R Interface.



Correct answer: A

Feedback for 1st incorrect answer:

HINT: An R Interface exists only when an TA functional group is involved. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is A. B is the S/T interface and C is the U Interface.

Feedback for correct answer:

That's right. B is the S/T interface and C is the U Interface.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
TE2, TA, NT1 and Switch Office		For all of these items, just use a simple box diagram as shown. The clickable areas of this diagram are the lines in-between the boxes that are labeled A, B, and C.	

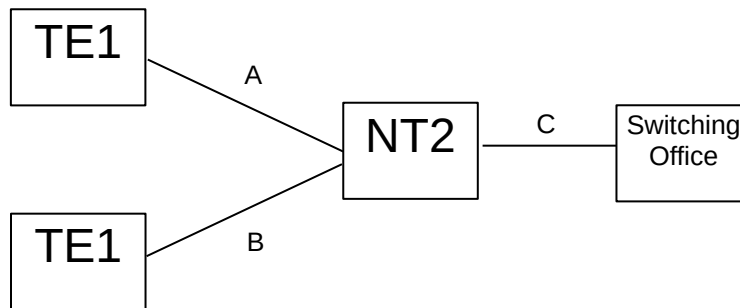
Topic: Reference Points
Storyboard number: 07-03-03-060E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT

Click on the correct answer.

Click on the U Interface.



Correct answer: C

Feedback for 1st incorrect answer:

HINT: The U Interface is outside of the customer's premises. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is C. A and B are both the reference point S/T Interface.

Feedback for correct answer:

That's right. A and B are both the reference point S/T Interface.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
TE1, NT2 and Switch Office.		For all of these items, just use a simple box diagram as shown. The clickable areas of this diagram are the lines in-between the boxes that are labeled A, B, and C.	

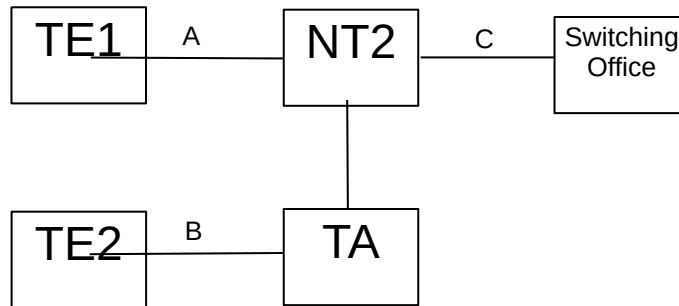
Topic: Reference Points
Storyboard number: 07-03-03-065E
Screen type: Exercise

Layout: 3
Level:

MasteryPOINT

Click on the correct answer.

Click on the S/T Interface.



Correct answer: A

Feedback for 1st incorrect answer:

HINT: This is the first interface the digital signal travels across. Please try again.

Feedback for 2nd incorrect answer:

Incorrect, the correct answer is A. B is the R Interface and C is the U Interface.

Feedback for correct answer:

That's right. B is the R Interface and C is the U Interface.

Screen graphics:

Component	Library	Description/notes	Clickable/ caption
TE1, TA, NT1 and Switch Office.		For all of these items, just use a simple box diagram as shown. The clickable areas of this diagram are the lines in-between the boxes that are labeled A, B, and C.	

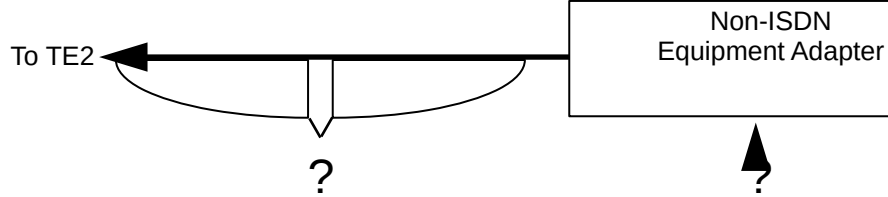
Topic: Reference Points
Storyboard number: 07-03-03-070E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT

Click on the correct answer.

What is the reference point and the functional group?



- S/T Interface and NT1
- S/T Interface and NT2
- R Interface and TE1
- R Interface and TA

Correct answer: R Interface and TA

Feedback for 1st incorrect answer:

HINT: The functional group is required for non-ISDN compliant equipment. The interface only exists with this configuration. Please try again.

Feedback for 2nd incorrect answer:

Incorrect. The reference point is the R Interface and the non-ISDN equipment adapter is a TA functional group.

Feedback for correct answer:

That's right.

Topic: Reference Points
Storyboard number: 07-03-03-075E
Screen type: Exercise

Layout: 1
Level:

MasteryPOINT
Click on the correct answer.

What is the reference point and functional group?

- NT1 and U Interface
- NT2 and S/T Interface
- TE1 and S/T Interface
- TE2 and R Interface

The diagram illustrates an ISDN telephone connected to an NT1. The telephone is represented by a box with a question mark below it. An arrow points from the telephone to a box labeled 'To NT1', with another question mark below the arrow.

Correct answer: TE1 and S/T Interface

Feedback for 1st incorrect answer:

HINT: The functional group is ISDN compliant. The interface always bridges compliant equipment to the network. Please try again.

Feedback for 2nd incorrect answer:

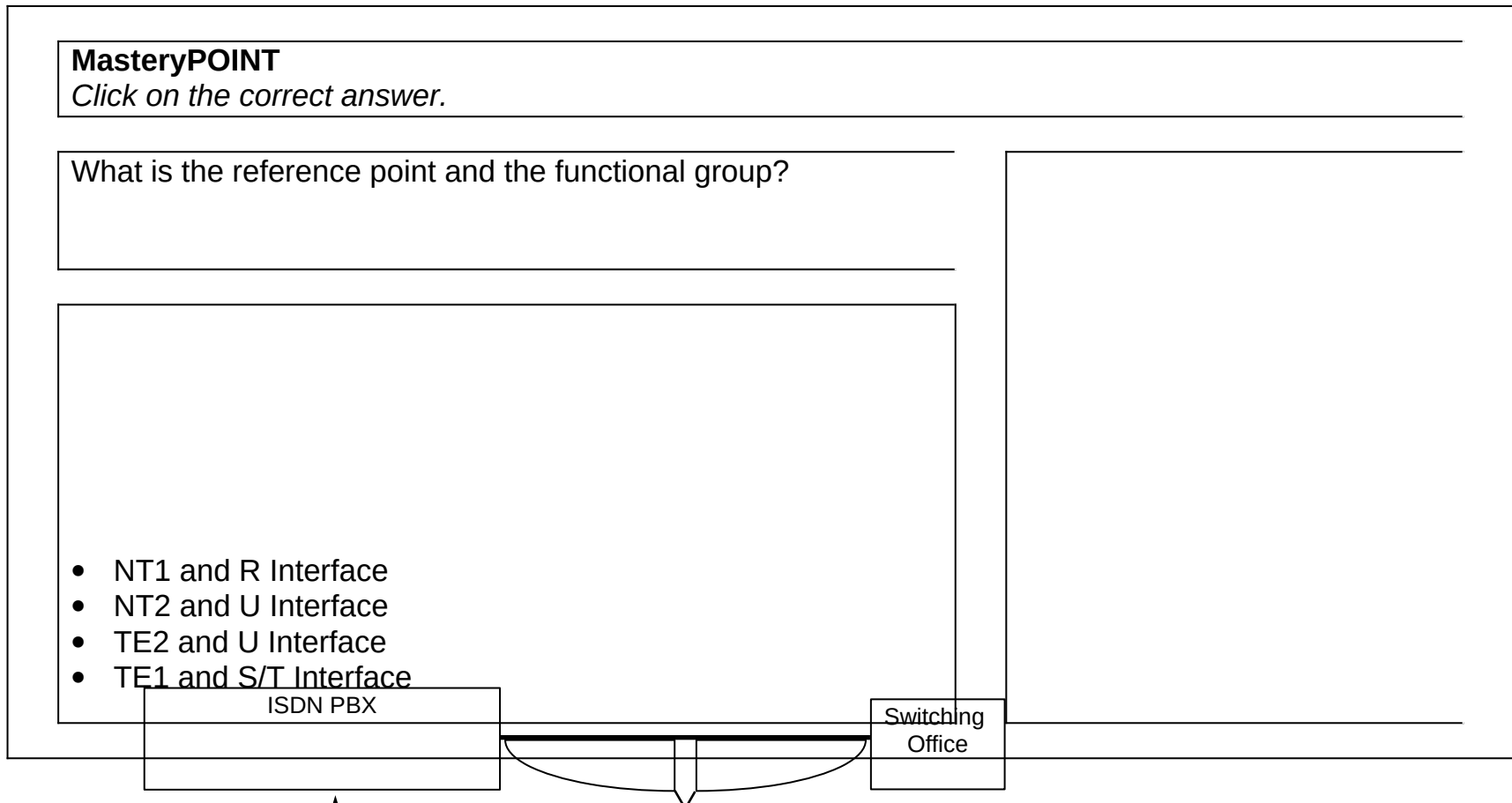
Incorrect. The functional group for the ISDN telephone is TE1 and the reference point is the S/T Interface.

Feedback for correct answer:

That's right.

Topic: Reference Points
Storyboard number: 07-03-03-080E
Screen type: Exercise

Layout: 1
Level:



Correct answer: NT2 and U Interface

Feedback for 1st incorrect answer:

HINT: This functional group can provide switching and line-concentration capabilities. The interface connects to the PSTN. Please try again.

Feedback for 2nd incorrect answer:

Incorrect. The ISDN PBX belongs to the NT2 functional group and the reference point is the U Interface.

Feedback for correct answer:

That's right.

Topic:**Storyboard number: 07-03-00-000S****Screen type: Section summary****Level:**

This completes the Network Structure section. In this section you learned:

- ISDN extends digital capabilities to the local loop and enables end-to-end digital connectivity
- The ITU developed functional groups as a common language to describe the parts of the local loop
- There are five functional groups—NT1, NT2, TE1, TE2, and TA
- Network terminating equipment demarks ownership and responsibility
- Reference points describe the protocol standards for the interface between functional groups
- There are three reference points—R Interface, S/T Interface and U Interface
- The U Interface is used only in the United States

If you are ready to move on to another section in this module, click on the Section Menu button.