

## UNIT 8: Radio Frequencies (II)

### GET READY!

#### 1. Listen and complete the text. Use the words from the box:

Cell phone technology is **(1)** \_\_\_\_\_ rapidly and changing the face of communications. So it is important to understand how a cell phone **(2)** \_\_\_\_\_ . Cell phones are **(3)** \_\_\_\_\_ radios. They **(4)** \_\_\_\_\_ with the network in a full duplex system to transmit and receive radio **(5)** \_\_\_\_\_. Full duplex means that there are separate channels sending and receiving information so people can talk and listen to **(6)** \_\_\_\_\_ else simultaneously. This is in contrast to things like walkie-talkies that are **(7)** \_\_\_\_\_ duplex where you can't hear the other person if you are talking.

The network consists of low-powered radio antennas and **(8)** \_\_\_\_\_ arranged in cells. A cell is a certain geographic location that is served by a particular **(9)** \_\_\_\_\_. If you are moving your cell phone signal is transferred from cell to cell depending on your location in order to prevent you **(10)** \_\_\_\_\_ losing the call. All of these cells are connected to a mobile switching center. Signals are passed from the phone through the antenna and sent to the **(11)** \_\_\_\_\_ center where they will be either be passed to another cell or converted to a signal that can be sent along traditional telephone lines. The entire complicated process only takes a second to complete. **(12)** \_\_\_\_\_ the system is very important to keeping the lines of communication open.

## READING

### 2. Discuss with your partner. Complete the text with the most appropriate technical terms.

There are a number of components of a \_\_\_\_\_.  
They work together incredibly fast in order to enable a phone conversation. First, there is a radio base station. That is where the cell tower is located. It includes a transceiver, which allows the phone to transmit and receive radio signals. The mobile switching center and public switched telephone network are responsible for monitoring and routing calls.

A \_\_\_\_\_ is routed through a complex system in order to travel from the caller to the recipient.

First, the mobile phone sends a signal to a base station. Then, the base station routes the call to the mobile switching center. From there, the mobile switching center determines where the destination is. It might connect the call to another cell site. Or it might route the call through the public switched telephone network to connect to a landline.

### 3. Discuss with your partner and write down your answers

- What is a handbook and who uses it?

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- What does troubleshooting mean? Give one example.

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- What should a technician do first when there is a network problem?

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## MOBILE TECHNICIAN HANDBOOK

### Troubleshooting a Network: Connection Problem

1. Check the complaint database.

Are there any problems at the cell site? Are other groups of customers complaining about similar regional problems? If other areas are unaffected, the problem is likely at the base station.

2. Determine whether the problem occurs during uplink or downlink. This will help you clarify the origin of the problem.

3. If other users are not affected, contact the customer. It could be a problem with the transceiver. It could also be a handover problem. Sometimes, networks do not transfer the call properly. This is often a temporary problem. Have the customer attempt the call again, or on another device.

4. Check for interference. This might happen if adjacent cells connect over the same frequencies.

5. Contact the MSC and the PSTN. Ask if they're getting any complaints about network connections. It could be a bigger problem than just your network.

4. **Read the handbook. Then, mark the following statements as True or False.**

1. The handbook instructs technicians to check the complaint database first.
2. If the problem is the transceiver, the technician should contact the customer.
3. An MSC or PSTN is usually the cause of interference.

5. **Identify three outdated elements in the handbook. Explain why they are outdated.**