

ETTN15: Quiz Test 5

Chapter 16. NR Initial Access.

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1. The synchronization signals (SS) in NR does not follow the same approach as LTE. What is the main difference?
 - False, they are the same.
 - In LTE, the SS occupy the center of the carrier, while this restriction does not apply to NR.
 - In NR, the device needs to search on more frequency locations in order to find SS.
2. How a NR device can find the center of the carrier?
 - Because SS is at the center.
 - The device asks to the base-station by a request command in the PUCCH.
 - Once SS is found, UE needs to decode MIB and SIB to know the location of it relative to the center of the carrier.
3. The consequence of a long SS-block periodicity in a cell is:
 - Devices spend more time to acquire synchronization but the cell is more energy-efficient.
 - Devices spend less time to acquire synchronization and the cell is more energy-efficient.
 - Devices spend more time to acquire synchronization and the cell is less energy-efficient.
4. Once the device finds a SS block, how can it determine the relative location within the set of possible locations?
 - By PSS. Different SS blocks in a period have different PSS.
 - By SSS. Different SS blocks in a period have different SSS.
 - By PBCH. It is specified in the corresponding MIB.
5. What can be a reason to have high number of beams for transmitting SS-blocks (SS burst set)?
 - Large number of users in the cell (high-density cell).
 - Because the SS-block period is also high.
 - High frequency band.
6. There is no collision in PRACH preambles because:
 - It is based on scheduling grant.
 - Devices wait until no other device is transmitting to transmit the preamble.
 - It is false. Collisions may happen.
7. A device transmits a PRACH and no response is obtained. What can the device do?
 - Search for another cell and transmit PRACH there (handover).
 - Transmit another PRACH with same power.
 - Transmit another PRACH with higher power.
8. Which of the following information can the UE obtain with the PRACH response?
 - Timing advance.
 - MIB.
 - Numerology.

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1-2.

2-3.

3-1. Long SS-block periodicity makes the devices stay more time in each frequency in the synchronization raster. At the same time, the less frequent transmission of SS makes the system more energy efficient.

4-3.

5-3. High frequency band comes typically together with narrow beams.

6-3.

7-3. The first answer is false because handover is not that procedure, and it tries in another cell only after a certain number of tries in current cell with increasing power.

8-1.