

RP-161266

5G ARCHITECTURE OPTIONS – FULL SET

JOINT RAN/SA MEETING | JUNE 14TH 2016, BUSAN
DEUTSCHE TELEKOM AG



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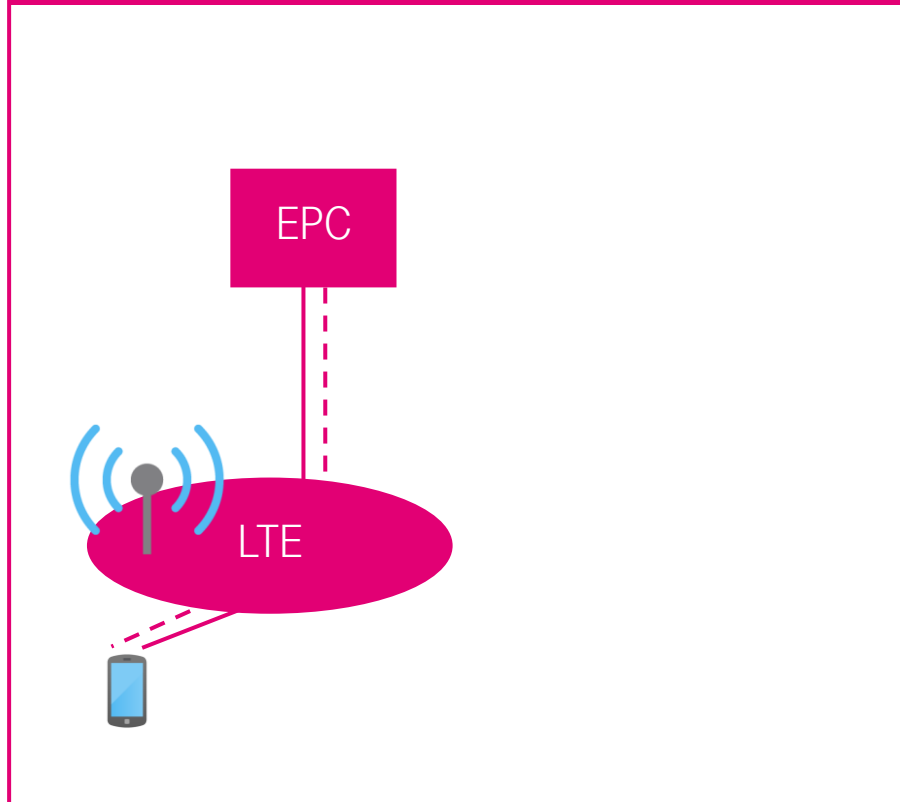
OUTLINE OF ARCHITECTURE OPTIONS IN THE LIGHT OF 5G AND “ACCELERATION” DISCUSSION

- **TWO RADIO TECHNOLOGIES HAVE TO BE CONSIDERED IN THE 5G DISCUSSIONS**
 - **LTE** (IN ITS REL-15 VERSION) AKA “ELTE” IN SA2
 - **NEXT GENERATION RADIO** (“NR”)
- **PLUS RADIO LEVEL AGGREGATION OF BOTH RADIO TECHNOLOGIES IN 2 VARIANTS**
- **TWO CORE NETWORK CONCEPTS HAVE TO BE CONSIDERED IN THE 5G DISCUSSIONS**
 - **EPC** (WITH POTENTIAL EVOLUTIONS)
 - **NEXT GENERATION CORE** („NGCN“)
- **THIS RESULTS IN 12 OPTIONS (NEXT SLIDES)**

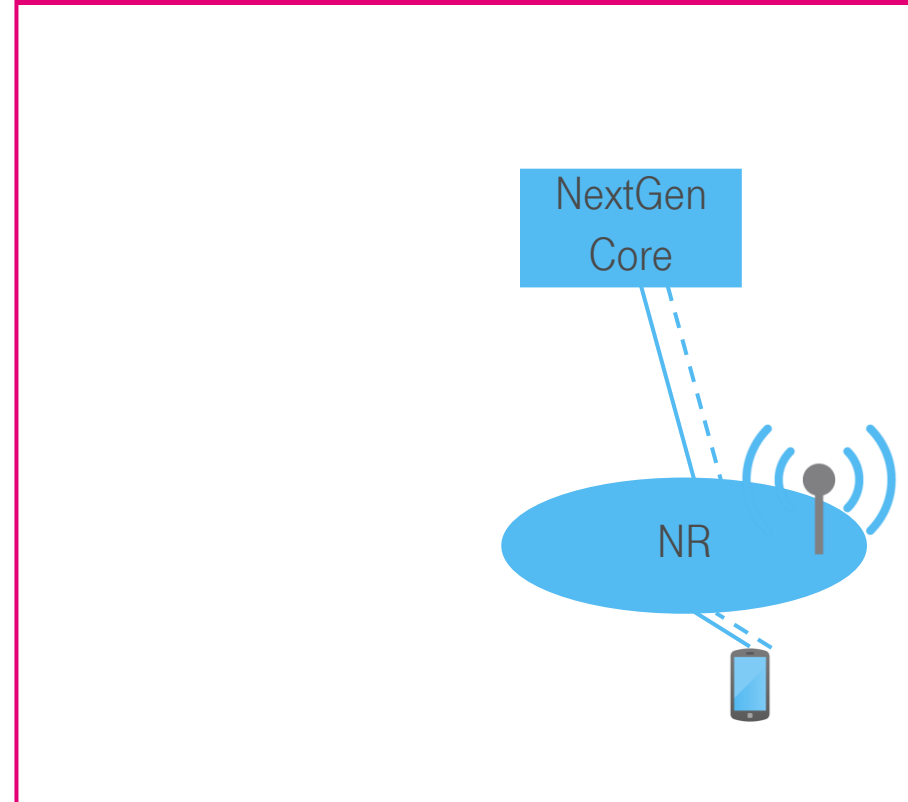


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (1/6)

1) Standalone LTE, EPC connected - legacy

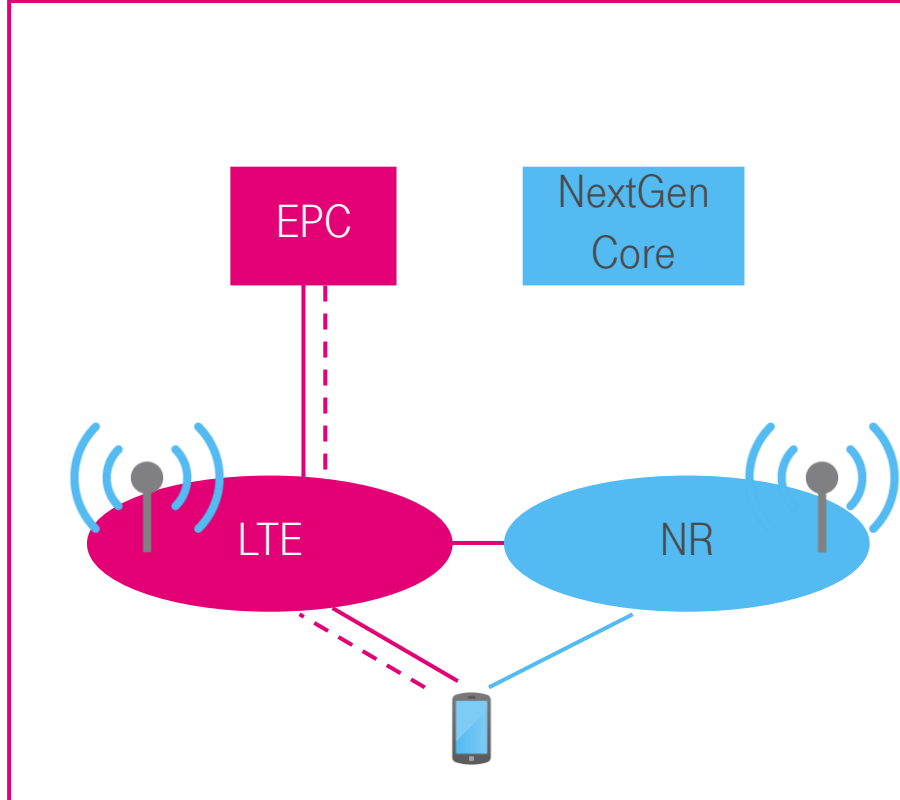


2) Standalone NR, NGCN connected

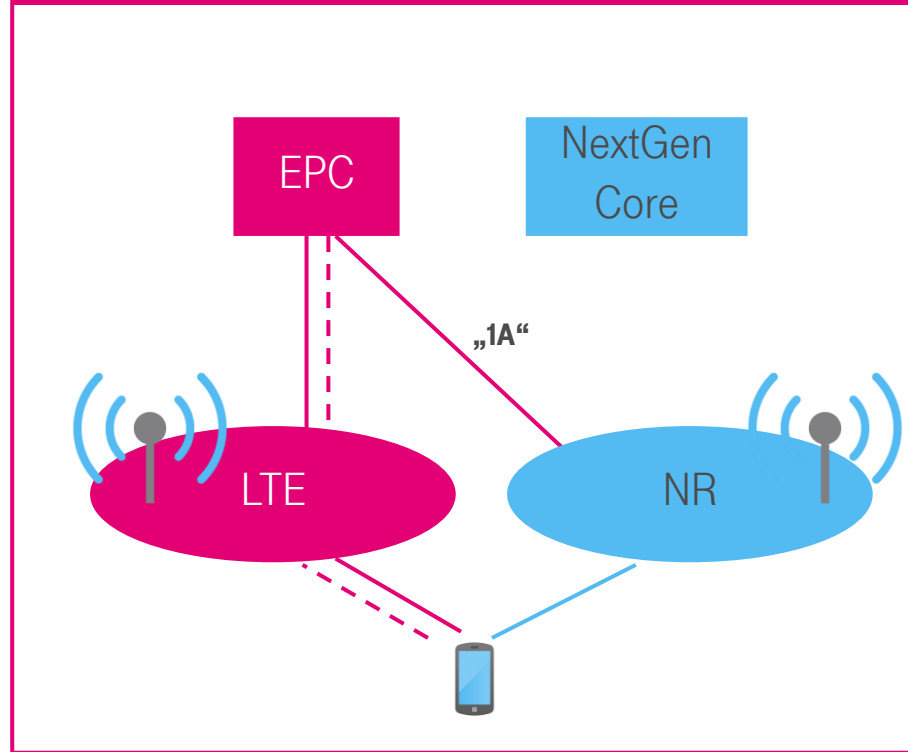


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (2/6)

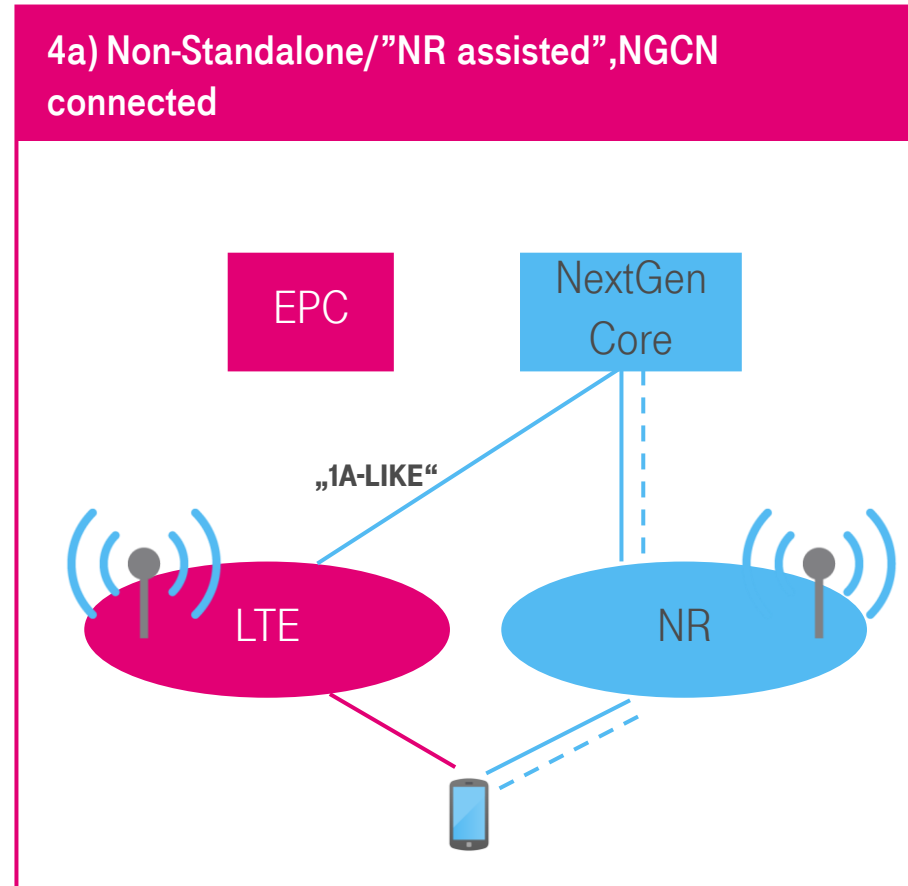
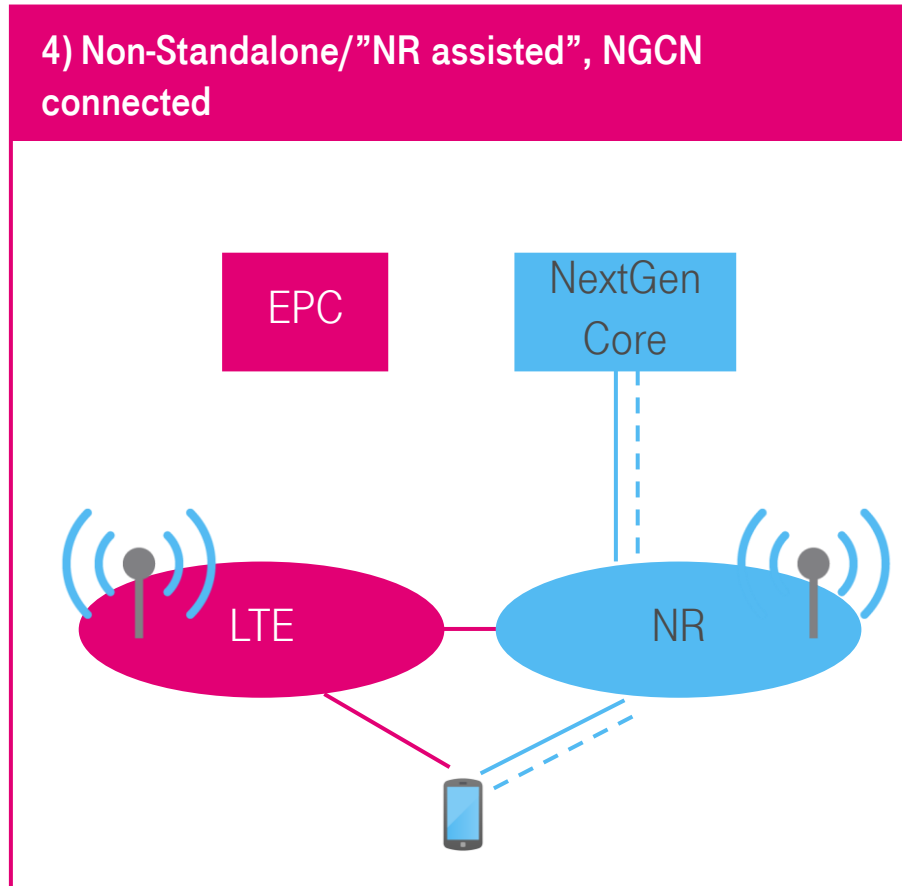
3) Non-Standalone/"LTE assisted", EPC connected



3a) Non-Standalone/"LTE assisted", EPC connected

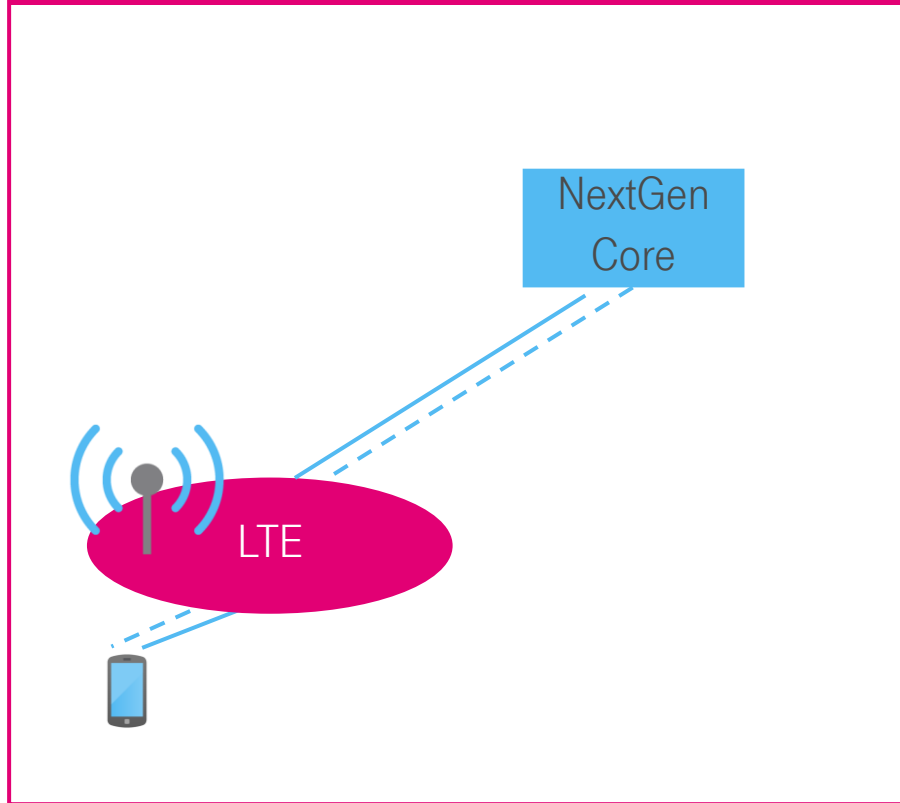


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (3/6)

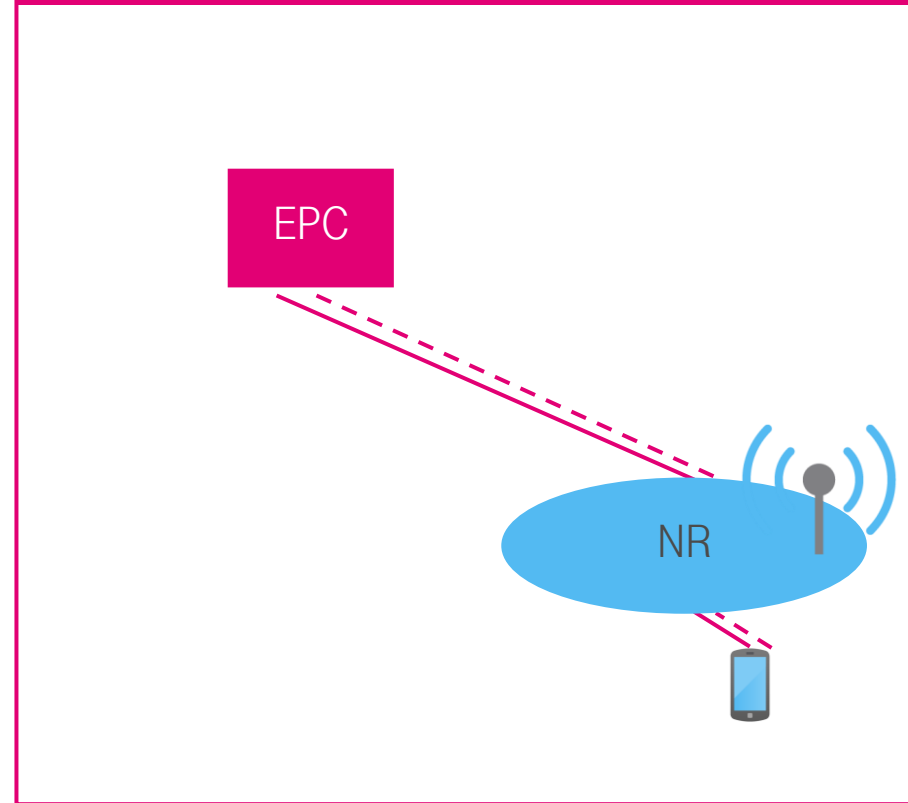


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (4/6)

5) Standalone LTE Rel-15, NGCN connected

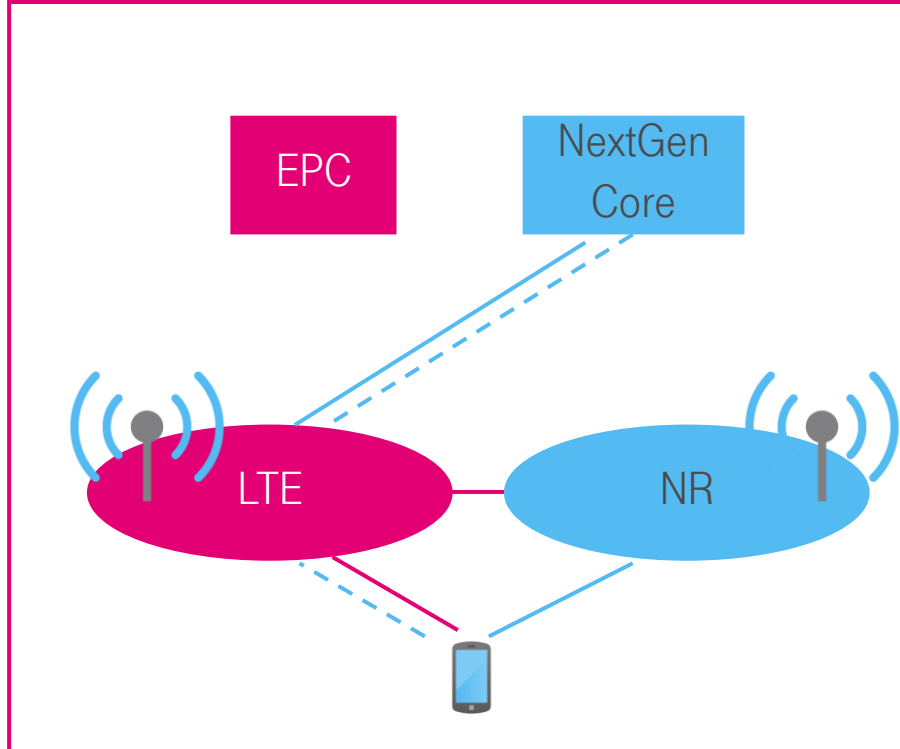


6) Standalone 5G NR, EPC connected

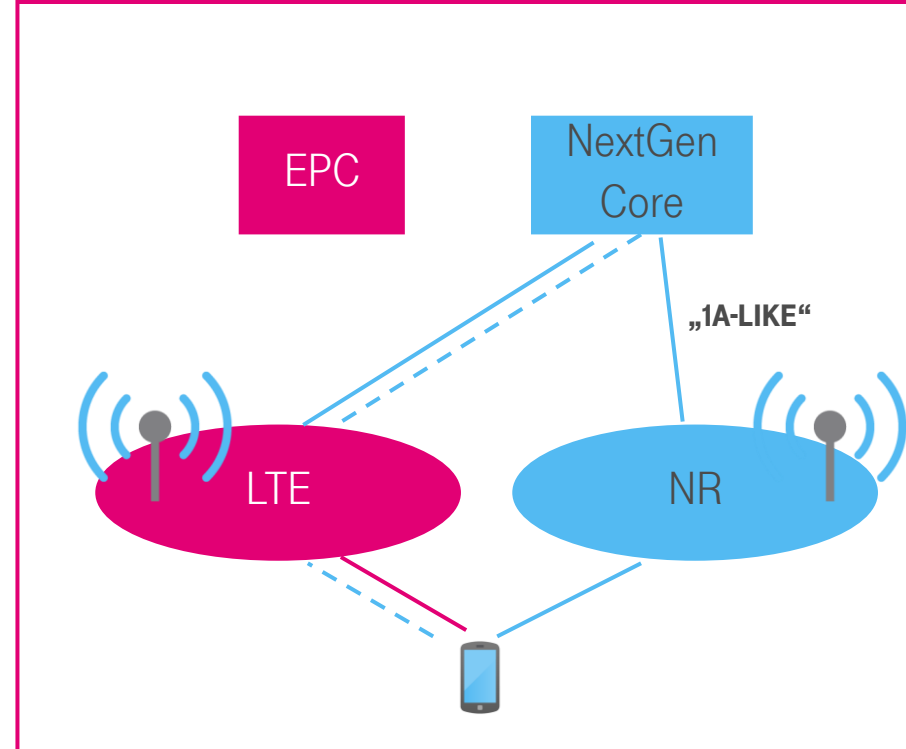


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (5/6)

7) Non-Standalone/"LTE assisted", NGCN connected

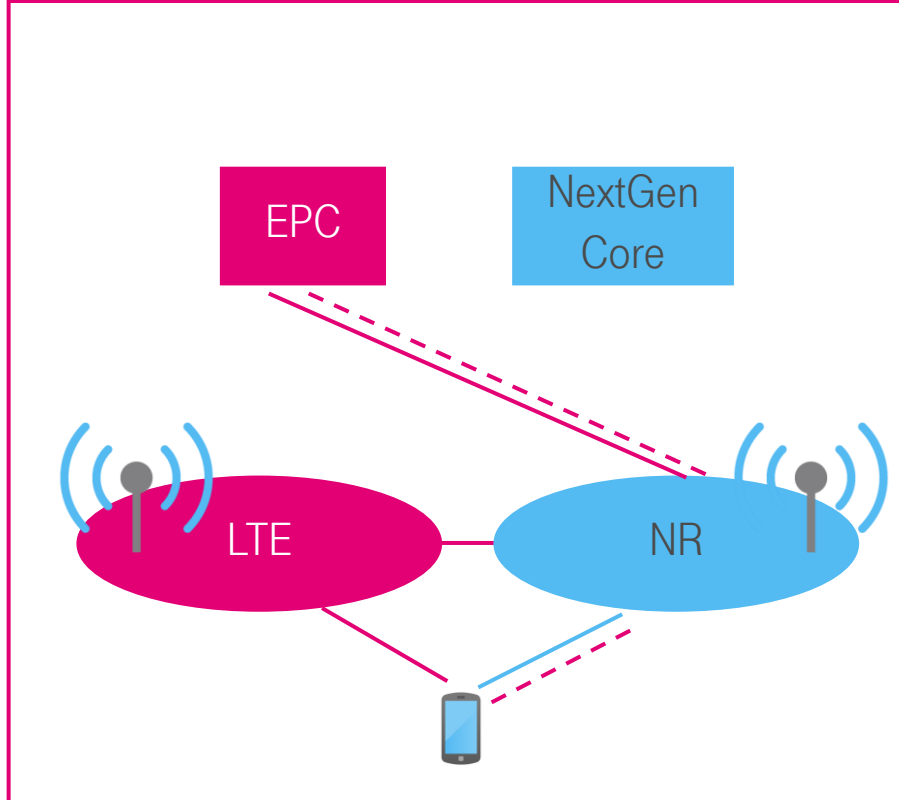


7a) Non-Standalone/"LTE assisted", NGCN connected

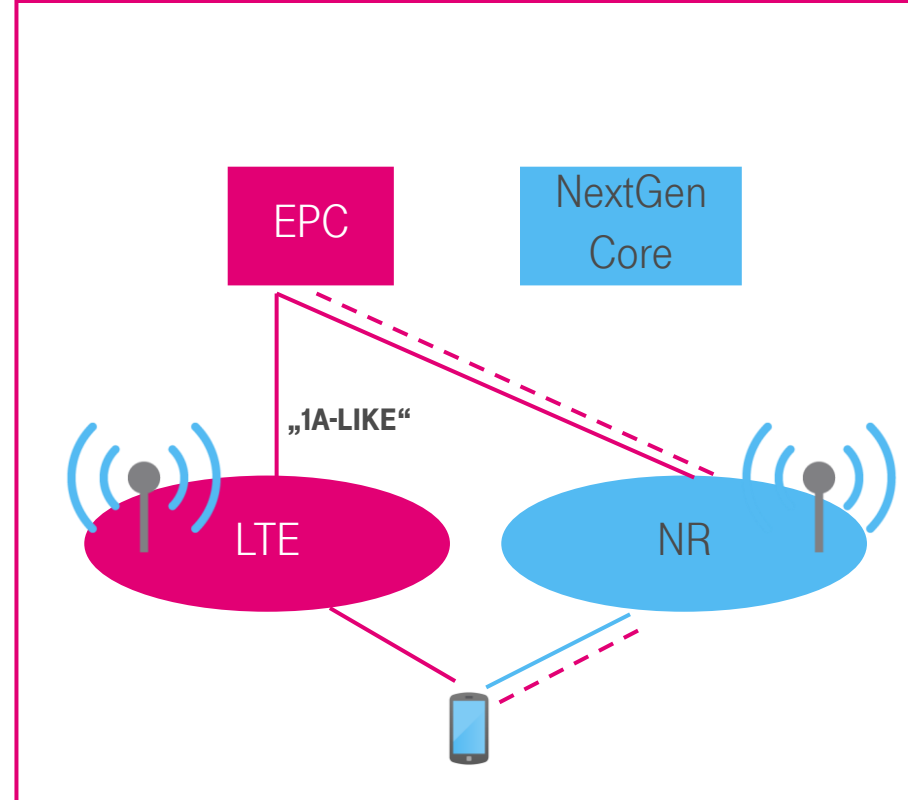


5G SCENARIOS IN 3GPP NR & NEXTGENCORE (6/6)

8) Non-Standalone/"NR assisted", EPC connected



8a) Non-Standalone/"NR assisted", EPC connected



QUESTIONS AND CONCLUSIONS

- **SCENARIO 1) IS LEGACY → 11 OPTIONS REMAIN**
- **DOES 3GPP NEED TO SUPPORT ALL REMAINING 11 ARCHITECTURE OPTIONS ?**
- **IS THERE A PHASING POSSIBLE / DESIRABLE ?**
- **HOW TO ENSURE FORWARD COMPATIBILITY IN ORDER TO AVOID GLOBAL FRAGMENTATION, ESPECIALLY CONSIDERING ROAMING ?**

STATUS OF RAN2 / RAN3 DISCUSSIONS PER OPTION (KINDLY PROVIDED BY HIDEAKI-SAN)

| | RAN2 | RAN3 |
|-----------------|------|------|
| Scenario 1 | - | - |
| Scenario 2 | YES | YES |
| Scenario 3 / 3a | YES | YES |
| Scenario 4 / 4a | YES | YES |
| Scenario 5 | NO | YES |
| Scenario 6 | NO | NO ? |
| Scenario 7 / 7a | YES | YES |
| Scenario 8 / 8a | NO | NO |



QUESTIONS ?
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