



# LTE-M and NB-IoT

TPR1026d | On-Demand | 5G Access | ⚙️

Course Duration: 4 hours

This course high-level technical overview Cellular Internet of Things (IoT) defined by 3GPP - LTE-M and NB-IoT. Fundamental concepts of IoT-centric optimizations for a wireless network are explained. IoT-specific characteristics of the wireless network and relevant UE categories (e.g., M1, M2 and NB1 and NB2) are described.

## Intended Audience

Technical and product marketing personnel working for wireless operators, equipment and device manufacturers, as well as IoT architects and designers.

## Objectives

After completing this course, the student will be able to:

- Describe the meaning and motivation behind IoT and MTC
- Give examples of LPWA technologies and their characteristics
- Describe how Cellular IoT requirements are met in 4G LTE
- Describe the characteristics of Cat-M and Cat-NB devices
- Describe air interface characteristics for Cat-M and NB-IoT operations
- Describe different modes for data delivery for cellular IoT
- Sketch an end-to-end architecture and bearer paths for cellular IoT

## Course Prerequisites

[LTE Overview](#)

## Outline

1. IoT Basics
    - 1.1 IoT: What and Why?
    - 1.2 Wireless Optimizations for IoTExercise: Knowledge Checks
  2. LTE Enhancements for IoT
    - 2.1 Capacity Management and Enhancements
    - 2.2 Coverage Enhancements
    - 2.3 Battery Life EnhancementsExercise: Knowledge Checks
  3. Network Features
    - 3.1 Device Positioning
    - 3.2 Network enhancements and Data deliveryExercise: Knowledge Checks
  4. UE Categories and Operations
    - 4.1 UE categories in LTE-M and NB-IoT
    - 4.2 LTE-M operations
    - 4.3 NB-IoT operationsExercise: Knowledge Checks
- Putting it all together  
Final Assessment