



5G Redcap & eRedcap Training

This expert-led training dives deep into 5G Reduced Capability (RedCap) and Enhanced RedCap (eRedCap) — two emerging features from 3GPP Release 17 and 18 that are revolutionizing how 5G supports the Internet of Things (IoT), wearables, industrial sensors, and mid-tier broadband devices.

You will explore how RedCap brings the power of 5G to lower-complexity, lower-cost, and lower-power devices — creating new opportunities across smart cities, manufacturing, logistics, and consumer electronics. The course also covers eRedCap enhancements, performance trade-offs, spectrum usage, and deployment scenarios — enabling participants to make informed decisions on device strategy, network planning, and service monetization.

Duration

2 days

◆ **Module 1: RedCap – Concept, Drivers, and Evolution**

- Motivation for RedCap (Reduced Capability UE)
- Market demand: Wearables, sensors, industrial devices
- Positioning vs LTE-M, NB-IoT, mMTC, and eMBB
- 3GPP Release 17 highlights
- Supported use cases and verticals

◆ **Module 2: RedCap Architecture and UE Categories**

- Network-side changes to support RedCap
- UE categories (NR RedCap, CAT-R)
- Capability reductions: Bandwidth, antenna config, layers
- Supported bands (FR1), carrier bandwidth, scheduling
- Control plane and user plane differences

◆ **Module 3: RedCap Performance and Trade-offs**

- Throughput and latency profiles
- Power consumption vs eMBB
- Coverage and mobility implications
- HARQ, MIMO, DL/UL modulation trade-offs
- Realistic expectations vs LTE IoT tech

◆ **Module 4: RedCap Deployment Strategies**

- Spectrum selection (Sub-6 GHz FR1)
- RedCap in standalone vs non-standalone
- Coexistence with eMBB and slicing
- Cell configuration and capacity planning
- Coverage/KPI tuning and optimization

◆ **Module 5: eRedCap – Enhancements in 3GPP Release 18**

- Why eRedCap? Limitations of baseline RedCap
- Enhancements in R18:
 - Time domain multiplexing
 - Reduced PAPR
 - Enhanced UL and UL-only carriers
 - Improved mobility and paging
- Use case expansion (connected health, industrial video)

◆ **Module 6: Device Ecosystem and Certification**

- RedCap chipset vendors (Qualcomm, MediaTek, UNISOC)
- Device roadmap (smartwatches, routers, industrial modems)
- RAN and device certification
- Interoperability and testing frameworks
- GSMA & GCF certification landscape for RedCap

◆ **Module 7: Monetization & Business Models**

- How MNOs can monetize RedCap (B2B, B2B2C)
- RedCap for private 5G, slicing, and edge
- Enterprise use cases: Manufacturing, healthcare, logistics
- Pricing tiers and ARPU potential vs NB-IoT

◆ **Module 8: Future of RedCap – What's Next?**

- RedCap vs eRedCap vs RedCap Advanced (early R19)
- RedCap for NTN and satellite
- Integration with slicing, URLLC, edge
- Alignment with 5G Advanced and 6G planning
- Open Questions: Regulation, spectrum, coexistence