Overview of CBRS

TPR1039x | Expert-Led Live | 5G Access | ⚙⚙⚙
Course Duration: 4 hours

Exponentially rising data traffic, scarcity of spectrum, and expectations of enhanced user experience including 1Gbps data rates are driving operators to explore the use of shared spectrums such as CBRS – Citizens Broadband Radio Service. Operators can deploy LTE networks in 3.5 GHz CBRS spectrum using LAA. CBRS can be used in various business models including traditional mobile operators and new operators. CBRS also supports Private LTE networks. The course provides a high-level overview of the CBRS system, motivation for CBRS deployment, network architecture, network operation and deployment use cases.

Intended Audience

A high-level technical overview to personnel involved in product management, marketing, planning, design, engineering, and operations.

Objectives

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

- Define CBRS
- Differentiate Tiered licensing structure: IA, PAL and GAA
- Give examples of use cases for CBRS
- Sketch the architecture of a CBRS-based network
- Describe the roles of a CBSD, SAS, and ESC
- Step through key operations of CBRS

Course Prerequisites

LTE Overview

Outline

1. CBRS Essentials
1.1 Definition of CBRS
1.2 Three-tier licensing structure (IA, PAL, GAA)
1.3 Types of spectrum
1.4 Band 48 for CBRS
1.5 CBRS Standards bodies - CBRS Alliance, WInnForum
1.6 CBRS Use cases

2. CBRS System Architecture
2.1 End-to-end architecture
2.2 CBSD categories A and B
2.3 Key nodes: SAS, ESC, Proxy
2.4 End user devices
Exercise: CBRS Band characteristics

3. CBRS Operations
3.1 Overview of CBSD operations
3.2 Registration
3.3 Grant Request
3.4 Exchance between CBSD and SAS
3.5 Inter-SAS communications
3.6 Dynamic Protection Area (DPA)
3.7 Security mechanism

4. CBRS Deployment
4.1 Use cases: Mobile Offload, Fixed Wireless, Private LTE, Neutral Host
4.2 CBRS in LAA and eLAA operation

Putting It All Together