iBwave CERTIFICATION COURSE SYLLABUS
iBWAVE PRIVATE NETWORKS (LTE/5G & Wi-Fi®)

iBwave PRIVATE NETWORKS LTE/5G CERTIFIED

Note: Course syllabus is subject to change

LEARNING OBJECTIVES

At the end of this certification program, you will be able to:

✔ Describe the concept and characteristics of Private Networks (PN)
✔ Identify which wireless technology (Private LTE, Private 5G, Wi-Fi, IoT) is more suitable for a specific application
✔ Design in-building private network and Wi-Fi projects using plans, small cells/access points, and other network components
✔ Add specific project details using annotations and mark-ups
✔ Model a building incorporating walls and surfaces composed of various materials
✔ Optimize the network design by running and analyzing predictions
✔ Collect, import and modify survey data
✔ Configure and generate reports

FUNDAMENTALS OF PRIVATE NETWORKS

✔ What Is a Private Network?
✔ What is CBRS?
  • CBRS History
  • Tier Architecture
  • Frequency Management Terms
  • Devices
✔ Private versus Public Cellular/Wi-Fi
✔ Private Network Technologies
✔ Private Network Use Cases

EXPLORING iBWAVE PRIVATE NETWORKS

✔ Menus, Buttons and Tabs
✔ Information Panels
✔ Plans and Parts Panel
✔ Utilities

STARTING A PROJECT

✔ Best practices for creating a project in iBwave Private Networks
✔ Define key project properties

BUILDING MODELING

✔ Import walls and Floor Plans
✔ Draw and edit walls
✔ Scale Floor Plan and Set Reference Point
✔ Set up horizontal surfaces
✔ Set up simple inclined surfaces
✔ Building Configuration
✔ View a project in 3D

PREDICTION: COVERAGE AND CAPACITY

✔ Propagation Models
  • Fast Ray Tracing Propagation Model
  • Variable Path Loss Exponent Propagation Model
✔ Antenna Contours
✔ Process of Running Predictions
  • Configure area, prediction, and propagation model properties
  • Define Plan/Prediction Area, Environment Type, and Body Loss Zones
  • Add Propagation Output Maps
  • Run Propagation Output Maps and View Results
✔ Capacity Requirements and Definition
✔ Capacity Analysis

DESIGNING Wi-Fi NETWORKS

✔ Work with the Parts Toolbox
✔ Add Access Points
✔ Access Point Properties
✔ Automatic Access Point Placement and Automatic Wi-Fi Channel Assignment
✔ Output Maps for Wi-Fi

DESIGNING PRIVATE NETWORKS

✔ Private Network Project Deployment Process
✔ Add Small Cells
✔ Output Maps for Cellular

DESIGN PLAN AND OTHER PLAN FEATURES

✔ Interconnect components
✔ Organize the Design Plan
✔ Design for Multiple Floors: Risers
✔ Design for Multiple Buildings: Vias
✔ Component Database Editor

DATA COLLECTION

✔ Importing Survey Data
✔ Generating Survey Data
✔ Viewing and Filtering Survey
✔ Editing Trace Route and Survey Data

REPORTS

✔ Types of Reports
✔ Preparing for Reports
✔ Generate, View, Export, and Print Reports

PRIVATE NETWORK DESIGN FROM SCRATCH WORKSHOP

  • Design Criteria
  • Start a Project from Scratch

EXAM (2 hours) – Private Network Cellular Design

  • Upon successful completion of this exam, the student will be awarded a Certificate for iBwave Private Networks Certification (LTE/5G)

Wi–Fi DESIGN FROM SCRATCH WORKSHOP (Optional)

  • Design Criteria
  • Start a Project from Scratch

EXAM (2 hours) – Private Network Wi-Fi Design (Optional)

  • Only needed if certification in Wi-Fi is desired
  • Upon successful completion of this exam, the student will be awarded a Certificate for iBwave Private Networks Certification (Wi-Fi)