iBwave TRAINING COURSE SYLLABUS

COURSE: SMALL CELLS

iBwave TRAINING PROGRAM

ABOUT THE COURSE:

Learn how to quickly and efficiently plan, design and deploy indoor Small Cell networks through iBwave Mobile Planner, and become proficient with the latest wireless technologies: cellular and Wi-Fi.

Create projects, complete with floor plans and equipment layouts, directly from the field. Evaluate the coverage and performance of your Small Cell network using propagation maps for expected RSRP, RSCP, RSSI, throughput and handoff. Analyze your Small Cell Wi-Fi coverage using Wi-Fi survey interpolation maps and SSID/Channel filters. Document your site surveys with pictures, annotations and markups and produce "As-Built" documentation.

LEARNING OUTCOMES:

Upon completion of the course, you will understand:

➡ What Small Cells are and how they co-exist with the macro-network.
➡ The best practices for the deployment of Small Cell networks indoors including site survey activities, design and installation.
➡ How to use iBwave Mobile Planner, through hands-on exercises and workshops.
➡ How iBwave Mobile can be subsequently used to create "As-Built" documentation.
➡ How iBwave Mobile is integrated to the iBwave suite of products and how to effectively exchange project information with your colleagues and partners.

1 Day Syllabus
PREREQUISITES:
Basic IT network knowledge

INTRODUCTION
TECHNOLOGY OVERVIEW

Small Cell Technologies
✔ What is a Small Cell?
✔ Types of Small Cells
✔ Indoor vs outdoor
✔ Co-existence with macro-network
✔ Coverage considerations
✔ Capacity considerations
✔ SON (Self Organizing Networks)

Cellular Technologies for Small Cells
✔ WCDMA, HSPA
✔ LTE

Wi-Fi technologies for Small Cells
✔ Channel planning
✔ Interference challenges
✔ Wi-Fi deployments

Small Cell Network Connectivity
✔ Small Cell architectures
✔ Power considerations
✔ Backhaul connection to the network

LEARNING THE TOOL
SITE SURVEY WITH iBwave MOBILE PLANNER
(Hands-on exercises included throughout this section)

✔ Create a project
✔ Select the default type of environment and network requirements
✔ Create floor plans
✔ Create environment zones on the floor plans
✔ Add components and connect to the Ethernet network
✔ Define macro environment using
  ▶ RF measurements or manual entry
  ▶ Wi-Fi measurements
✔ Demo – collecting RF measurements
✔ Demo – collecting Wi-Fi measurements
✔ Generate propagation maps for expected RSRP, RSCP, RSSI, throughput and handoff
✔ Generate Wi-Fi survey interpolation maps
✔ Use SSID and Channel filters to analyze Wi-Fi coverage
✔ Draw on floor plans and create annotations
✔ Upload the project to iBwave Cloud
✔ Demo – reviewing the project in iBwave Design
  ▶ Open the Mobile Planner project in iBwave Design
  ▶ View and approve design changes
    • Evaluate impact of changes on coverage, capacity and costs
    • Make adjustments to components if required
  ▶ Upload the approved design to iBwave Cloud
✔ Create "As-Built" documentation

USING THE TOOL
HANDS-ON WORKSHOP
Review the steps required to create a project from start to finish and complete a set of exercises in order to practice the following:

✔ Performing a site survey with potential equipment locations and cable routings
✔ Creating environment zones on the floor plan
✔ Evaluating the performance of the network with propagation maps
✔ Dealing with the impact of interference from the macro-network
✔ Using SSID and Channel filters to analyze Wi-Fi coverage
✔ Documenting the environment with annotations and markups
✔ Using iBwave Cloud to store and exchange project documentation
✔ Modifying designs and creating "As-Built" documentation