

PLANNING (RF) FOR SUCCESS WHAT DOES GOOD LOOK LIKE?

ALEX JOVEL
SALES MANAGER
IBWAVE

Successful RF Planning must consider multiple factors to provide the wireless experience our customers require.

Providers

- Managed Service Providers (MSPs)
- MNOs
- MVNOs
- Carrier Networks
- Channel Partners
- Operation Partners
- DIY

Devices

- Laptops
- Smartphones
- Tablets
- Handhelds, AR & VR
- Wearables

Tools

- Site Survey
- Venue Modeling
- Predictive tools
- Testing tools
- Scanner tools

Technologies

- Wi-Fi 6/6E
- LTE
- 5G
- CBRS
- Bluetooth
- LoRa
- Zigbee

Users

- Employees
- Customers
- Visitors

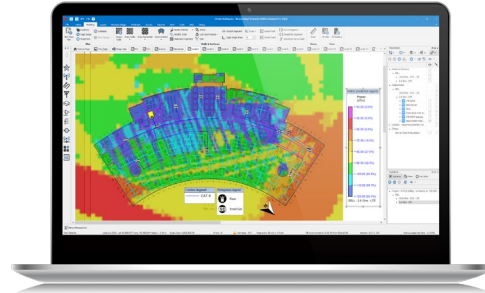
Use cases

- Indoor/Outdoor/Mixed
- Multiple-site management
- IoT
- Edge
- Applications
- Automated functions
- Mission-critical services

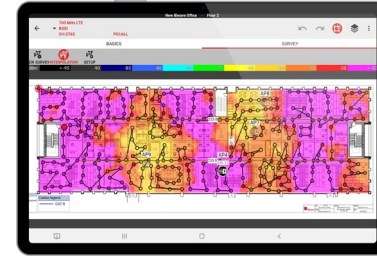
Save time and money with iBwave's seamless and complete RF Planning Solutions for Success



iBwave Mobile + Epiq
PRISM Scanner



iBwave Design /
Reach



iBwave Mobile



iBwave Unity



SURVEY

- Easy RF data collection (LTE, 5G, P25)
- Document site survey annotations, pictures, drawings
- Cloud collaboration



DESIGN

- Design any wireless technology for indoor/outdoor (LTE/5G, Wi-Fi & Public Safety)
- Simulate 3D network and generate heat maps
- Generate detailed reports with digital documentation



VERIFY

- Use accurate as-built documentation
- Validate performance with RF walk test



MAINTAIN

- Store all documentation, reports and site information to the cloud for future maintenance and network testing baselines

The Solution for Connectivity Complexity

Insert **Markup** **Plan Area** **Export**

New Picture Plan Legend Annotation Image Text Box Line Rectangle Grid Layout Area Exclude Area Auto-define Plan Areas Plan to image Plan to DXF Annotations to Zip Building to Google Earth

- Parts
- Quick Search
- ★ Preferred parts
 - 📶 Signal Source
 - 📡 Cable
 - 📡 Antenna
 - 📡 Passive DAS
 - 📡 Amplifier
 - 📡 Active DAS
 - 📡 Fiber Optic Hardware
 - 📶 Network Equipment
 - 📡 Miscellaneous
 - 📡 Infrastructure



Indoor prediction legend
Outdoor prediction legend

Prediction

- Antenna Contours
 - Operator 1
 - 700 MHz - LTE
 - 2100 MHz - AWS - LTE
- Output Maps
 - Operator 1
 - 700 MHz - LTE
 - Macro RSRP Interpol...
 - LTE RSRP
 - Dominance over macr...
 - LTE RSRP - Leakage
 - Reach - Imported prediction maps
 - Operator 1
 - 2100 MHz - AWS - LTE
 - Others
 - Survey Data Interpolation
 - Donor Antenna Isolation

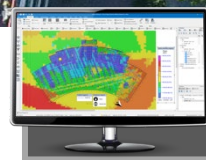
Plans

Systems Plans Part Info

	Plan (sq. ft)	Pred (sq. ...)
Arena...	0.00	2491.67
Arena...	0.00	16347.48
Arena...	0.00	15841.87
Arena...	0.00	31481.51
Arena...	38821.05	38821.05
Arena...	28888.88	28888.88
Picture plans		
Cover Page		
Outdoor		
Campus		

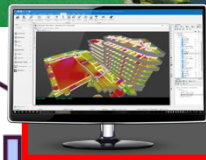
Planning (RF) for Success – Looks Good Indoor & Outdoor

Outdoor Design 3G/4G/5G, LTE, Wi-Fi, CBRS, IoT



iBwave Reach

In-Building 3G/4G/5G, LTE, Wi-Fi, CBRS, IoT, Public Safety

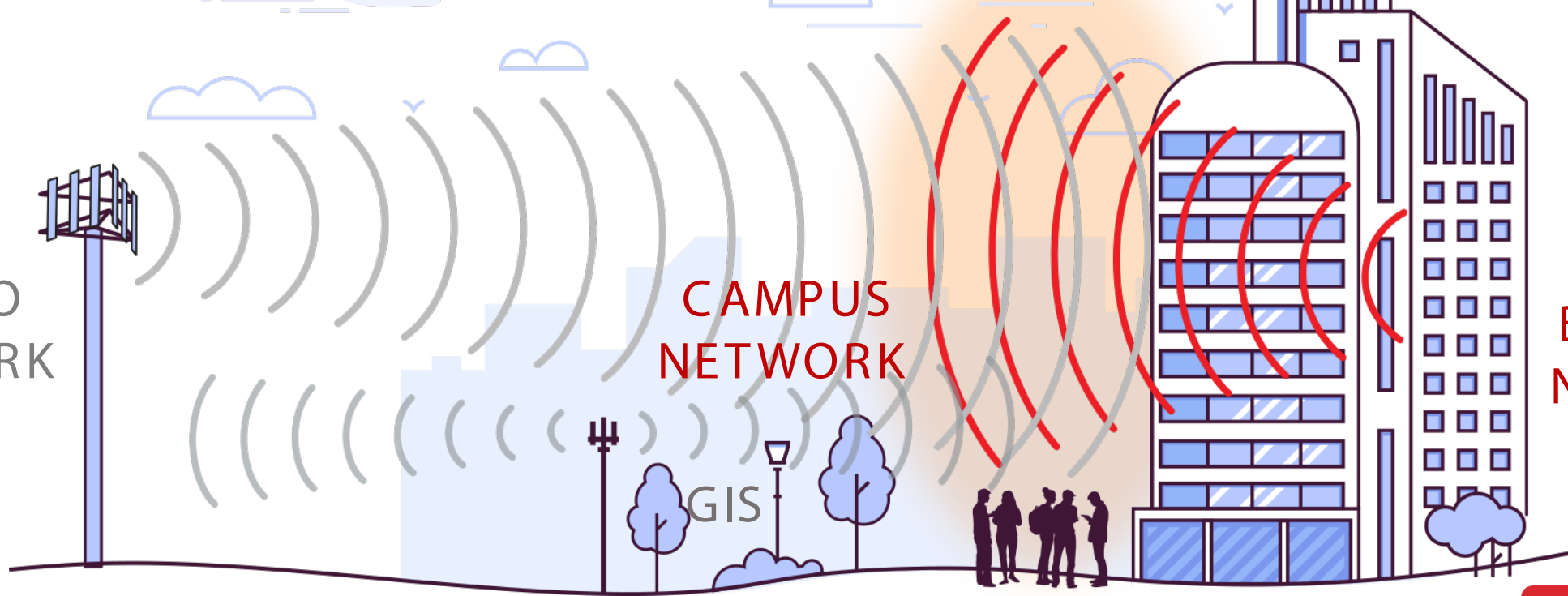


iBwave Design Enterprise

MACRO NETWORK

CAMPUS NETWORK

IN-BUILDING NETWORK



MACRO TOOL

iBwave REACH
CAMPUS DESIGN

IN-BUILDING DESIGN

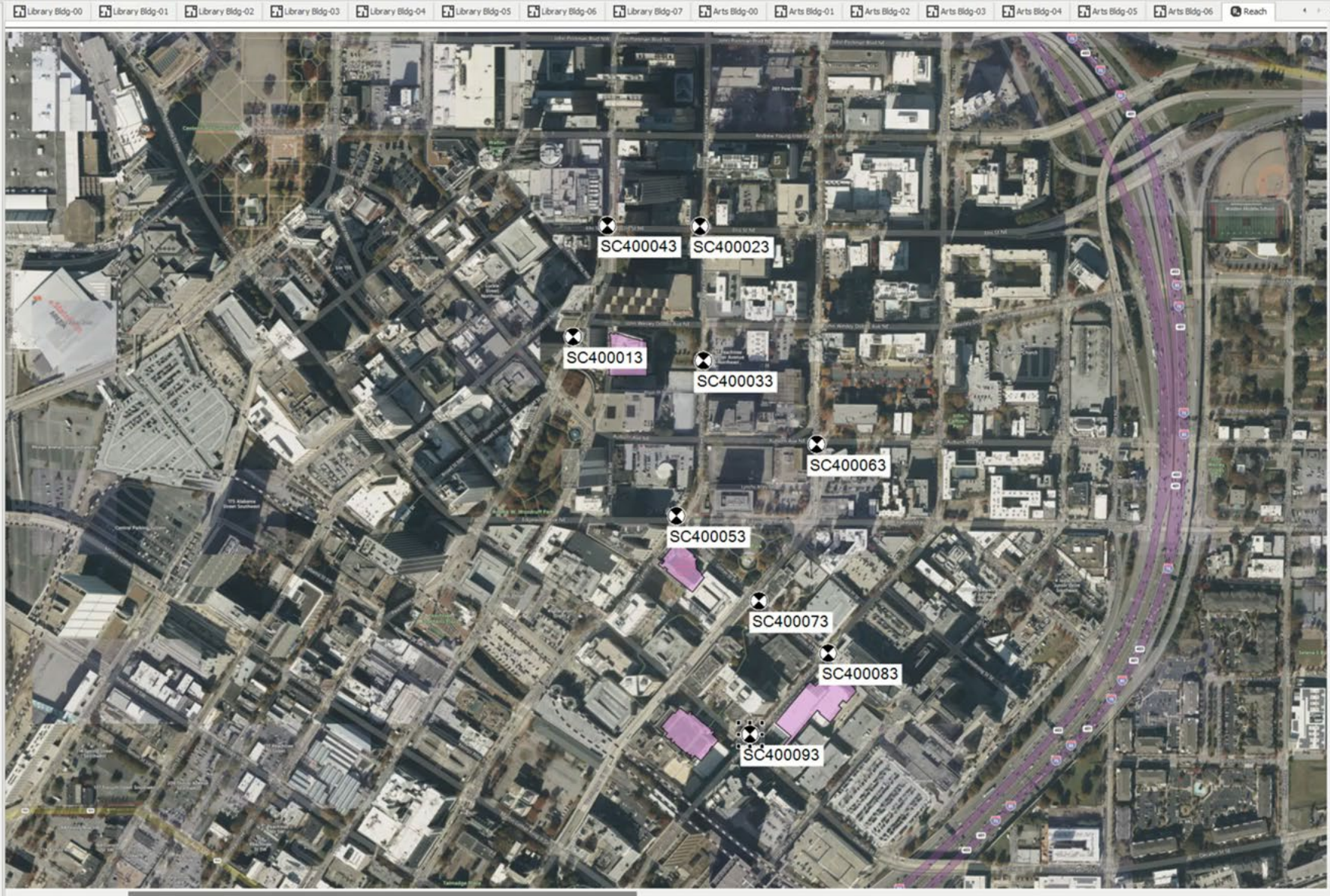




Campus Wireless

4G/5G, LTE, CBRS, Wi-Fi, IoT, Public Safety

Navigation and toolbars including: Create Reach Outdoor Plan, Create GIS Plan, Toggle Building Polygons, Import Sites, Export Sites, Import Predictions, Export Predictions, and a Parts list with a Quick Search field.



Outdoor - Imported prediction maps panel. Includes a tree view for Operator 1 with signal types (700 MHz - LTE, 1900 MHz - PCS - LTE, 2100 MHz - AWS - LTE) and RSRP levels (1.5m to 21.3m). Includes a table for Outdoor - Output Maps.

Plans panel showing a tree view of building categories and a table of area data.

	Plan (sq. m)	Pred (sq. ...)
Arts Bldg-02	4317.75	6104.28
Arts Bldg-01	5091.63	5057.83
Arts Bldg-00	0.00	0.00
Library Bldg	43953.69	55165.28
Library Bldg-07	5294.91	5285.98
Library Bldg-06	5405.20	8211.85
Library Bldg-05	5767.72	8605.53
Library Bldg-04	6207.90	6162.42
Library Bldg-03	6096.52	8902.80
Library Bldg-02	6086.43	8940.90
Library Bldg-01	6050.08	6010.87
Library Bldg-00	3044.94	3044.94
Arena	7529.92	18423.28
Arena-06	231.53	463.06
Arena-05	368.14	2984.43
Arena-04	321.41	2882.34
Arena-03	318.38	5802.99
Arena-02	3606.59	3606.59
Arena-01	2683.86	2683.86
Recreation Center Building	22246.15	25034.46
Recreation Center-05	1702.26	1702.26
Recreation Center-04	4407.68	4407.68
Recreation Center-03	2516.85	2516.85
Recreation Center-02	5395.15	5395.15
Recreation Center-01	4762.75	7409.99
Recreation Center-00	3461.45	3602.53

Thank you

