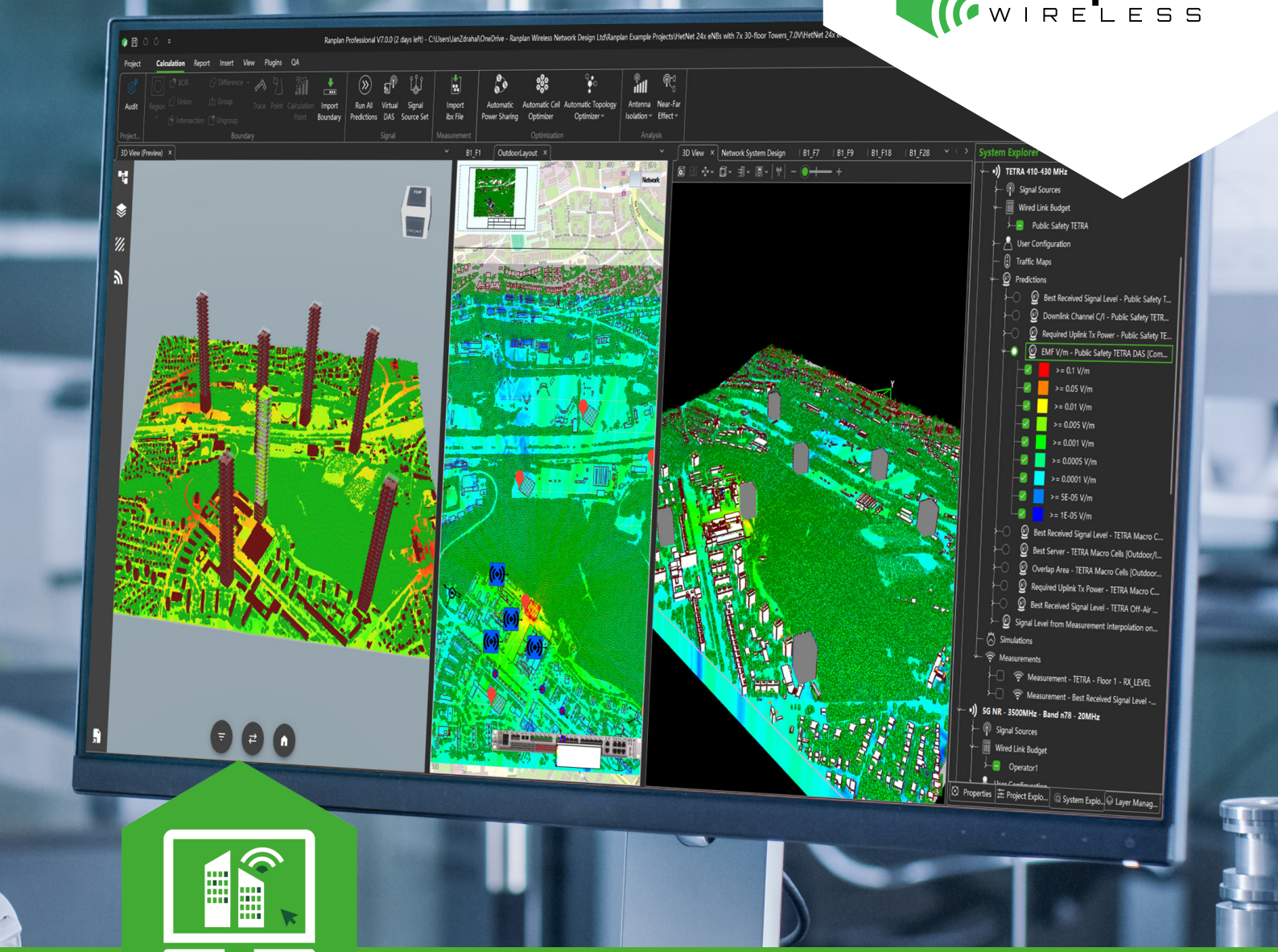
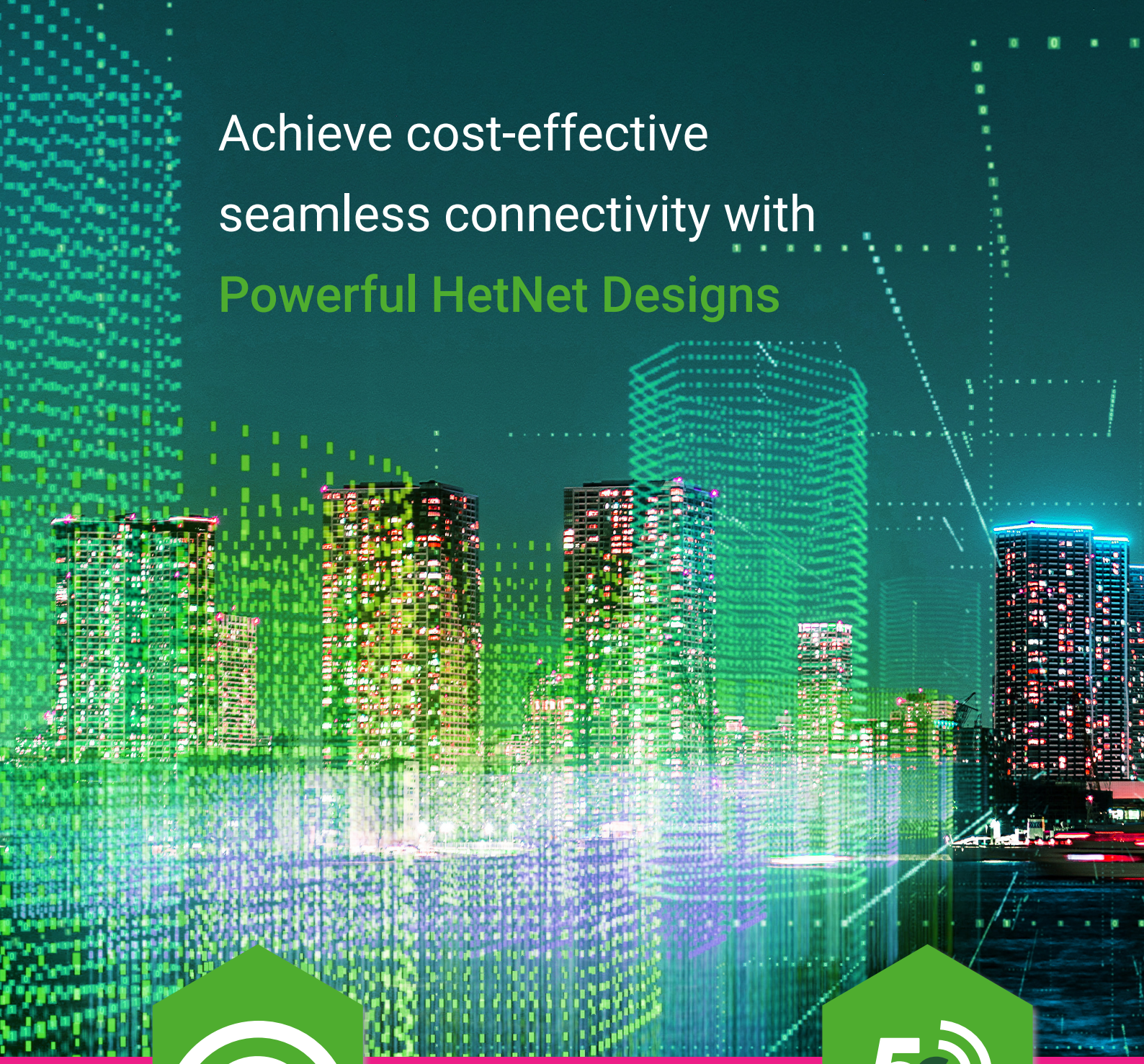
Ranplan WIRELESS



Perfecting Network Design with Ranplan Software Solutions

Design, Optimize and Simulate In-Building and Urban Outdoor Wireless Networks

Achieve cost-effective seamless connectivity with Powerful HetNet Designs



Achieve **30%** CAPEX / OPEX savings

Design productivity enhanced by **50%**

5G

4G

6G

Perfecting Network Designs

We pioneer software solutions that perfect the design, optimization and simulation of in-building and urban outdoor wireless networks.

Our open platform simplifies network planning by allowing imports of geographical data, CAD floorplans, mesh objects, and 3D building models from BIM authoring software. The intelligent automation and 3D ray-tracing simulations expedite the design process, expertly identifying potential issues and optimizing network performance for reliable connectivity.

Our software has been proven to **enhance design productivity by 50%** and **reduce CAPEX/OPEX by 30%.** This supports the swift and cost-effective delivery of advanced wireless networks, providing an unmatched quality of service for end-users and businesses.

Leading the way

We are on a mission to greatly improve the wireless communication between people and machines by developing software solutions that can perfect the way the world is wirelessly connected.

Ranplan Wireless is at the forefront of research and development in radio propagation, small cells and DAS networks, automatic RAN optimization and the deployment of complex HetNets for cellular, private wireless, public safety, IoT and Wi-Fi communications.

Our experts harness the latest in computer science and Artificial Intelligence (AI) to elevate the quality and performance of our network engineering platforms supporting current and future wireless technologies and services.


Private Wireless


Public Safety


Cellular Networks


Enterprise Wi-Fi


Buildings


Cities


Industrial


Stadiums


Tunnels


Campuses


Ports

Ranplan Professional

All-in-One Network Planning Solution

Unified Design: Simultaneously design in-building and urban outdoor wireless networks.

Efficient 3D Environment Creation: Import geographical data, CAD floorplans, mesh objects, and 3D building models from BIM software.

Realistic Scenarios: Assign building materials for accurate replication.

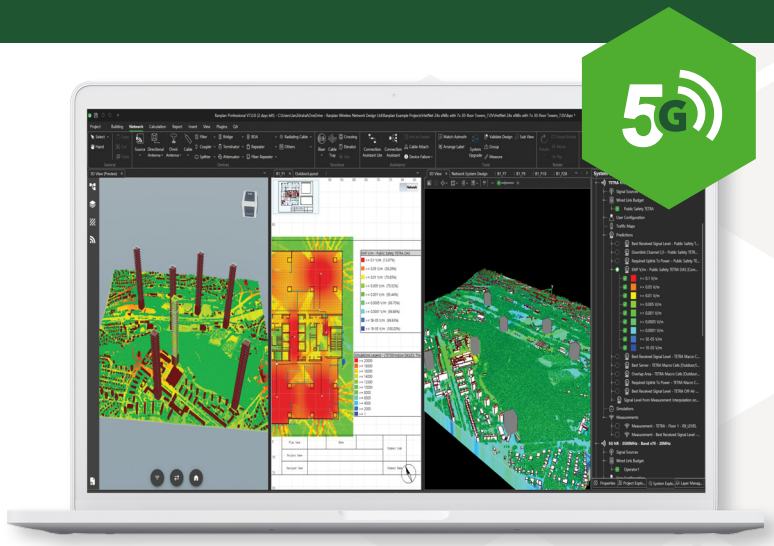
Advanced 3D Simulation: Simulate coverage, capacity, latency, and reliability with 3D ray-tracing.

Real-World Accuracy: Calculate signal propagation interactions between indoor/outdoor environments.

Boost Performance: Automate network configuration for optimal performance and energy efficiency.

Predict Quality of Service: Evaluate and forecast end-user wireless service experience.

Measure ROI: Use results to deploy cost-effective solutions that meet key performance indicators.



Complete HetNet Design

Fully model and plan your indoor and urban outdoor networks.

Rapid and Cost-Effective

Boost productivity by **50%** and save up **30%** in CAPEX / OPEX.

Fast 3D Ray-Tracing

Realistic 3D modelling and propagation for design precision.

Network Planning Precision

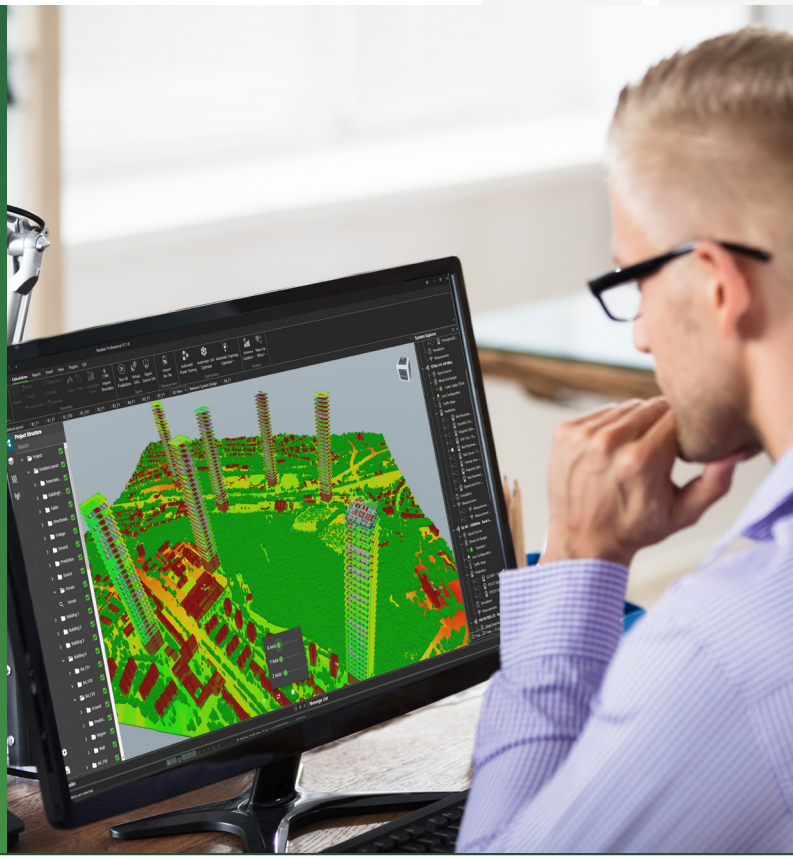
Reduce network planning time and improve design accuracy with the Ranplan automatic network optimization modules.

Efficient Network Topology
Optimize cable routes and component selection.

Reduce Interference and Signal Leakage
Fine-tune channel allocation and transmission power.

Antenna Optimization
Adjust location, quantity, transmission power, and type.

Performance Metrics
Define and analyze signal strength, coverage, and leakage for optimal design.



Ranplan In-Building

Predict and Optimize Indoor Coverage and Capacity

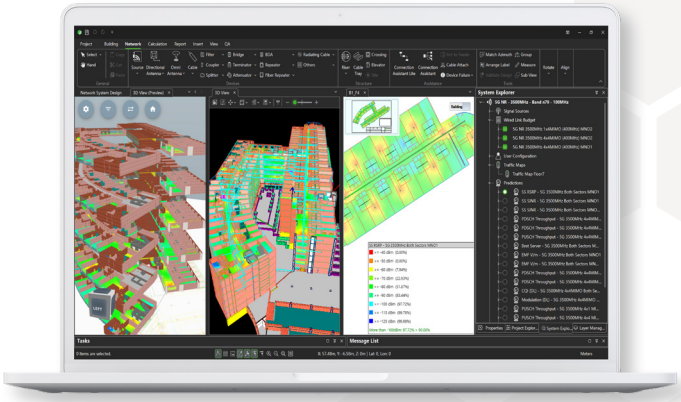
Swift & Cost-Effective: Design and optimize indoor wireless networks efficiently for a diverse range of applications.

Fast Building Modelling: Import 3D building models from Building Information Modelling (BIM) IFC files or CAD floorplans.

True 3D Ray-Tracing: Predict and evaluate wireless coverage capacity, latency, and reliability in complex indoor environments accurately.

Intelligent Optimization: Ensure networks meet wireless service KPIs across multiple technologies.

Automated Reporting: Generate diverse reports quickly with a simple click of a button.



Indoor Design Solutions

Perfect for large, complex in-building projects such as DAS, small cells and Wi-Fi networks.

Multi-Technology Support

Supports multiple technologies such as 5G NR, 4G (LTE), 3G, IoT, Wi-Fi, TETRA, DMR and P25.

Ranplan In-Building Lite

Accelerate and Validate In-Building Network Design

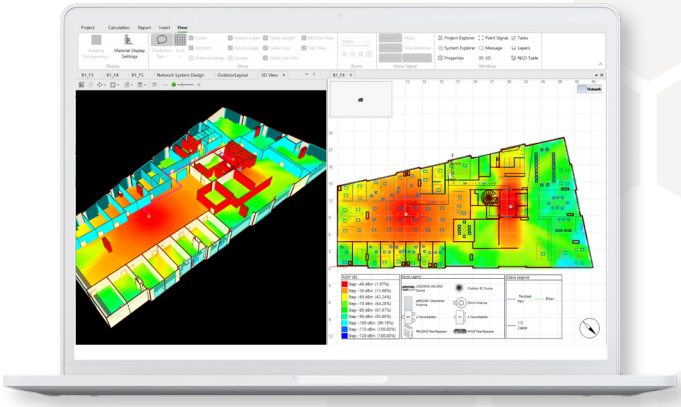
Intelligent Design Modules: Simplify the planning of passive DAS, small cells and non-fibre based Public Safety networks.

Intelligent Topology Optimization: Automatically optimize in-building network physical topology.

Validation with 3D Ray-Tracing: Ensure reliable signal coverage and strength in emergencies before deployment.

Cost and Time Savings: Precise planning reduces errors and upgrade needs, saving time and cost.

Automatic Reporting: Stay on track with real-time project information and reports from a single click.

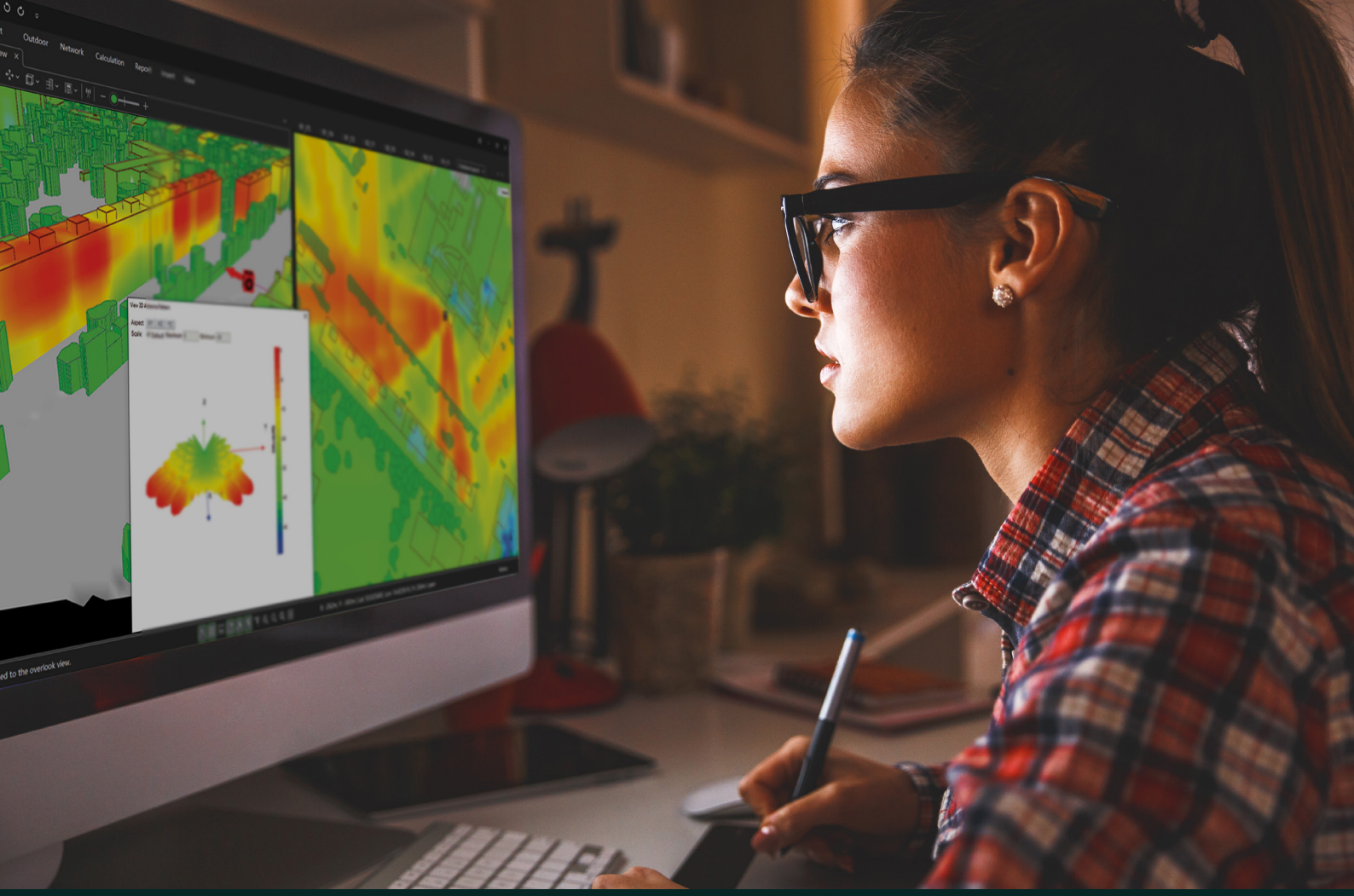


Cost-Effective Designs

An agile tool for designing small to medium enterprise projects requiring ubiquitous coverage.

Public Safety Networks

Ideal for rapidly designing indoor public safety networks that meet wireless coverage and capacity KPIs.



Ranplan Certification Program

Advance your wireless network design skills

Real World Examples

Directly apply the knowledge and experience you gain to a live working scenario.

Certify Your Skills

Accelerate your career with Ranplan credentials in complex HetNet design.

Designed by Experts

Courses created by experts who have extensive experience designing wireless networks.

Dedicated Support Team

Our teams are on hand if you have any require assistance during the course.

Ranplan Tablet

Simplify and Speed Up Onsite Wireless Network Design

Easy Building Info Capture: Quickly gather building details to begin network planning.

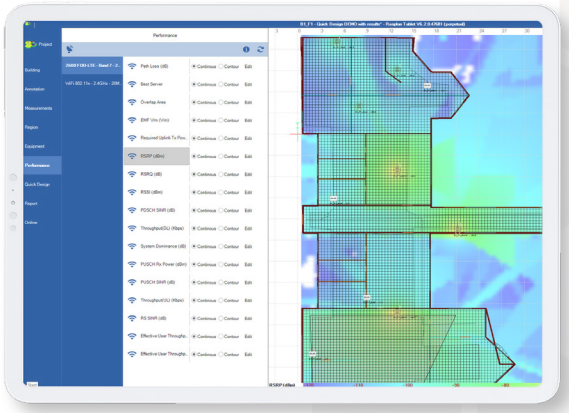
User-Friendly Interface: Ideal for users with limited RF planning knowledge.

Intelligent Design Module: Rapidly create preliminary indoor network designs.

3D Performance Visualization: Use capacity and coverage heatmaps to see predicted network performance based on KPIs.

Seamless Reporting: Generate reports for easy verification and validation.

Streamlined Bidding Process: Quickly produce quotes and timelines for projects.



Automate Onsite Design

Quickly and easily capture site information to begin the in-building network design.

Seamlessly Interoperates

All Ranplan planning tools interoperate with Ranplan Tablet.

Ranplan Device Hub

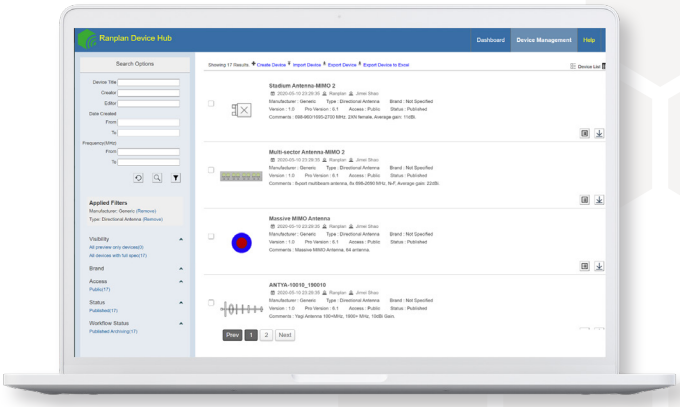
Comprehensive Database of Vendor Approved Components

Extensive Database: Over 16,000 devices from 175+ equipment vendors.

Independent and Neutral Partner: Up-to-date device information and fair representation in network designs.

Centralized Database: Secure environment for collaborative device modelling and interactive 2D/3D evaluation before importing into the network design.

Enhanced Accuracy: Use approved devices for precise radio propagation predictions and simulations, especially for Massive MIMO antennas, multi-beam antenna modelling, and multi-core fibre cables.



Access the Latest Devices

Incorporate the latest components from equipment vendors in your wireless network designs.

Interfaces Seamlessly

Instant access to the Device Hub from all Ranplan design software, including Tablet.

Discover the right software for you

	Feature	Professional	In-Building	In-Building Lite	Tablet
3D Indoor and Outdoor Modelling	Manual 3D Modeling (Walls, Doors, Windows, Ground, Roof & Atrium)	⬢	⬢	⬢	⬢
	Advanced 3D Manual Modeling (Curved/Circular Walls, Doors, Windows, Stairs, Tunnels, Inclined Planes)	⬢	⬢	⬢	
	Instance-Based Building Model Library	⬢	⬢	⬢	
	Body Loss Zone Modeling	⬢	⬢	⬢	
	Environment Zone Modeling	⬢	⬢	⬢	⬢
	Import Floor Plan Images	⬢	⬢	⬢	⬢
	Import Building Structures from CAD (Smart Extract) and Mesh Files	⬢	⬢	⬢	
	Import Building Models from BIM Authoring Software (IFC format)	⬢	⬢	⬢	
	Outdoor Manual Modeling and Import of Buildings, Foliage, Terrain & Clutter	⬢			
	Display Outdoor Tile Maps from Multiple Server Providers	⬢			
	Associate Indoor Buildings with Outdoor Structures	⬢			
Network System Design and Optimization	Support for 5G NR, 4G, 3G, 2G, Terahertz, TETRA, PMR, DMR, P25, IoT & Wi-Fi	⬢	⬢	⬢	⬢
	Indoor Network Design for Small Cell, Active DAS, Passive DAS & Wi-Fi	⬢	⬢	Active DAS not supported	Active DAS not supported
	Outdoor Network Design for Macro, Micro, Small Cells, vRAN & DAS	⬢			
	Multi-Source Modeling (Base Stations, CU, DU, Small Cells & Wi-Fi APs)	⬢	⬢	⬢	⬢
	Uplink & Downlink MIMO Modeling (2x2, 4x4, 8x8 & 16x16)	⬢	⬢	⬢	⬢
	Broadcast & Service Beam Modeling for Advanced Antenna Arrays in 2D & 3D	⬢	⬢	⬢	⬢
	Massive MIMO & Beamforming Modeling	⬢	⬢	⬢	⬢
	Network Model Library	⬢	⬢	⬢	
	Source Planning Tools	⬢	⬢		
	Flexible Cell Merging & Splitting	⬢	⬢	⬢	⬢
	Antenna Output Power Display & Coverage Contours	⬢	⬢	⬢	⬢
	Antenna Isolation & Near-Far Effect Calculation	⬢	⬢	⬢	
	Cable Modeling for Coaxial, Radiating & Jumper Types	⬢	⬢	⬢	⬢
	Multi-Strand Optical Fiber & Associated Component Modeling	⬢	⬢		
	Site, Riser, Elevator & Cable Tray Modeling	⬢	⬢	⬢	
	Cable Routing Across Floors	⬢	⬢	⬢	⬢
	Smart Cable Routine	⬢	⬢	⬢	
	Smart Layout & Device Grouping	⬢	⬢	⬢	⬢
	Network System Design Floor Plan Organizer & Floor Layout Design Pictograms	⬢	⬢	⬢	
	Import & Manually Modeling of Points, Traces & Regions	⬢	⬢	⬢	Manual modeling only
	Automatic and Smart Region Generation	⬢	⬢	⬢	
	Virtual DAS Functionality	⬢	⬢	⬢	
	Device Failure Indication, Connection Validation & Rapid Connectivity Assistance	⬢	⬢	⬢	
	Redundant Loop DAS Design	⬢	⬢	⬢	
Data	Create, Edit & Import Measurement Data	⬢	⬢	⬢	⬢
	Import/Export ibx File	⬢	⬢	⬢	⬢
	Georeference, Move to Origin, and Zoom to Measurement Data	⬢	⬢	⬢	
	Measurement Data Interpolation	⬢	⬢	⬢	
Propagation Modules	RF Propagation Pathloss Modeling & Calculations	3D Calculations	3D Calculations	2.5D Calculations	2.5D Calculations
	Morphology-Based Propagation Modeling	⬢	⬢	⬢	⬢
	Configurable Transmission, Reflection & Diffraction Calculations	⬢	⬢	⬢	⬢
	Atmosphere Absorption Modeling	⬢	⬢	⬢	⬢
	Support for 2D & 3D Antenna Pattern	⬢	⬢	⬢	⬢
	Extended Hata Modeling	⬢	⬢	⬢	⬢
	Environment Zone Modeling	⬢	⬢	⬢	⬢
	Body Loss Consideration	⬢	⬢	⬢	
	Calibration of Path Loss Exponent & Materials using Measurement Data	⬢	⬢	⬢	
	Outdoor Signal Propagation with/without Foliage & Terrain Diffraction Modeling	⬢			
	Indoor-to-Outdoor & Outdoor-to-Indoor Propagation Support	⬢			

Discover the right software for you

	Feature	Professional	In-Building	In-Building Lite	Tablet
Prediction Modules	KPI Predictions for 5G NR, Wi-Fi, 4G, 3G & other wireless networks	●	●	●	●
	Effective User Throughput Prediction Based on Configurable Traffic Maps	●	●	●	●
	System Dominance, Nth Best Server, Overlapping Areas, Co-Channel Interference & Uplink Predictions	●	●	●	●
	Energy Consumption Analysis	●	●	●	●
	Carrier Aggregation Prediction for 4G & 5G	●	●	●	●
	Wi-Fi 7 Multi-Link Operation (MLO) Analysis	●	●	●	
	Beamforming Interference Modeling	●	●	●	●
	Specific Beam Predictions for Massive MIMO Antenna Analysis	●	●	●	
	5G NR SS-RS & CSI-RS Power Offset Configuration	●	●	●	●
	5G Multi-TRP & LTE CoMP Evaluation for MIMO Enhancement	●	●	●	●
	Ultra-Reliability, Low Latency Communication (URLLC) Analysis	●	●	●	
	Reconfigurable Intelligent Surface (RIS) Predictions	●	●	●	
	Run Predictions by Floor, Region, Point, Trace or Full 3D	●	●	●	By Floor
	Configure Different Compliance Criteria for the Same KPI	●	●	●	
	Prediction Comparison Tools	●	●	●	
Simulation Modules	Simulations Based on Configurable Traffic Map	●			
	KPI Simulation for 5G, 4G & Other Wireless Technologies	●			
	Configurable Snapshots And TTIs Simulation	●			
	Downlink & Uplink User Status Simulation	●			
	HetNet Capacity Analysis with Hotspot Zones	●			
	Wi-Fi 7 Multi-Link Operation (MLO) Simulation	●			
	5G & LTE Aggregation Simulation	●			
	5G Multi-TRP And LTE CoMP Evaluation for MIMO Enhancement	●			
	5G NR SS-RS & CSI-RS Power Offset Configuration	●			
	Beamforming Interference Modeling	●			
	Specific Beam Simulations for Massive MIMO Antenna Analysis	●			
Optimization	Intelligent Optimization Modules (Frequency, Cell, Antenna, Topology, Network Profiler)	●	●	Topology only	Quick Design
	PCI/PSC Planning & RSI Planning	●	●	●	
	Automatic Topology Optimizer	●	●	●	
	Automatic Cell Optimizer (Multi-System and Multi-Objective Optimization)	●	●		
	Automatic Power Sharing Optimization	●	●		
3D Visualization	Comprehensive 3D Visualization of Indoor & Outdoor Spaces, Incorporating Network Topology & Wireless Signal Heatmaps	●	●	●	Legacy 3D View
	Customization of Material & Device Properties (Color, Texture, Opacity, Metallic, Roughness)	●	●	●	Limited
	Clipping & Offset Along X, Y & Z Directions to Reveal Internal Details	●	●	●	
	Prediction visualization styles and 3D animation along the X, Y, and Z axes	●	●	●	
	Environment Lighting Configuration	●	●	●	
	Dark & Light Themes Supported	●	●	●	
	Export Scenes to glTF, USDZ & Image Formats	●	●	●	
Reports	General & Comprehensive Report Generation, and Report Printing & Export	●	●	●	●
	Compliance Report Generation	●	●	●	
	Title Page Insertion	●	●	●	
	Annotation Insertion	●	●	●	●
Export	Export Project as IFC or CAD Formats & Export Designs and Results to PDF	●	●	●	
	Export to Image, XML or IBX Formats	●	●	●	●
	Export Building Models to Google Earth (KML/KMZ Formats)	●	Indoor only	Indoor only	Indoor only
Cloud	Intelligent Floor Plan Recognition (IFR)	●	●	●	●
	Real-Time Project Management	●	●	●	●
	D-Hub: Device Database with Over 16,000 Components from 175+ Vendors	●	●	●	

Here's what our customers have to say about Ranplan

"Providing reliable connectivity that meets our customer's needs in the Enterprise Industry with the most challenging environments requires partnering with the best-in-class and high-quality solutions vendors like Ranplan Professional which speeds up our planning processes for Private 4G/5G Networks. For business-critical Private Networks, Ranplan's accuracy has been a major advantage."

Timo Mäkelä, Senior Radio Engineer,
EDZCOM - a Cellnex company

"Freshwave have been delighted by the relationship with Ranplan. They are a flexible, responsive team and our engineers love their user interface and enhanced functionality. They've helped us deliver expert designs for hundreds of customer sites."

Tom Bennett, CTO, Freshwave

"Ranplan Professional is used intensively by Media Broadcast. The fast and easy 3D building modelling is to be emphasised. The integrated material database defines the physical properties of the building substance. A picture is worth a thousand words. The presentation of the common KPIs gives our customers a comprehensible impression, e.g. the planned coverage."

Paul Weiss, Media Broadcast

"Ranplan Professional will help us design our indoor networks in offices, shopping malls, underground rail systems, stadia and many other facilities and will enable us to keep pace with growing coverage needs and all the complexities that come with 5G and the Internet of Things."

Dr. Robert Joyce, Group Head of Radio Access Technology, Ooredoo

"Ranplan Professional provides our customers with an all-in-one independent network planning platform which is leading the way companies design and maintain their local 5G networks. The ability to precisely model the unique environments and optimize the network designs with the use of 3D RF simulations and productivity-enhancing automation tools has delivered and will continue to deliver substantial time and cost savings for our customers."

Shun Miyamoto - Information & Communications Team, Marubun

"Ranplan Professional's ability to accurately simulate the network as a whole rather than cell by cell helped us to optimize the overall performance."

Amr Albanna, CEO, Omega Wireless

"The only thing I like better than the speed at which I can complete designs with Ranplan is the support I receive with timely responses from courteous and knowledgeable people."

Edward Ridley - Staff Systems Engineer, CommScope

Revolutionizing the way wireless networks are planned in a smart connected world

About Ranplan Wireless

Ranplan Wireless pioneer software solutions for the design, optimization and simulation of in-building and urban outdoor wireless networks. Our open platform, intelligent automation and 3D ray-tracing simulations streamline the network planning process, expertly identifying potential issues and optimizing network performance for reliable connectivity. This results in an unparalleled quality of service, ensuring seamless and efficient wireless communication for end-users and businesses.

Ranplan Wireless is a subsidiary of Ranplan Group AB (Nasdaq First North: RPLAN) whose head office is in Stockholm, Sweden. The group operates out of offices in the UK, USA and China.

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Ranplan WIRELESS
Perfecting Network Design