Predictive Wi-Fi Network Design Service

The foundation for high-performance wireless networks

Organisations require a guaranteed, high-performing Wi-Fi network to support critical business applications, increasing device density and a growing reliance on cloud services. CACI enables this by providing wireless experts who leverage the industry-leading Ekahau AI Pro platform and Ekahau Connect suite to deliver highly accurate, reliable wireless designs through advanced predictive modelling.

A predictive Wi-Fi survey is an AI-driven, highly accurate virtual design of your wireless network, factoring in physical building characteristics before any equipment is installed. This process ensures optimal coverage, capacity and minimal interference across all bands (2.4 GHz, 5 GHz, and 6 GHz).

What CACI delivers

Detailed requirements analysis

Conducting a comprehensive review of your environment, using your provided floor plans (CAD, PDF, vector, or bitmap) to model and predict RF performance. This analysis considers your office layout, the types of client devices in use, and the capacity demands of business-critical applications to ensure the wireless design meets your operational needs.

AI-assisted predictive design

Utilising the Ekahau AI Auto-Planner to run tens of thousands of iterations against your specific wall materials and floor plan to find the optimal Access Point (AP) placements and configuration.

3D virtual modelling

Developing an accurate 3D model of the site, which accounts for the attenuation, reflection and diffraction properties of all building materials for maximum design precision.

Network simulation and optimisation

Running “rip-and-replace” scenarios and using the Automatic Channel Planner to simulate network upgrades, ensuring your 6 GHz (Wi-Fi 6E/7) design is optimised for immediate success.

Comprehensive reporting

Generating easy-to-interpret, custom reports that detail the network’s performance health and provide a clear, actionable blueprint for AP installation.

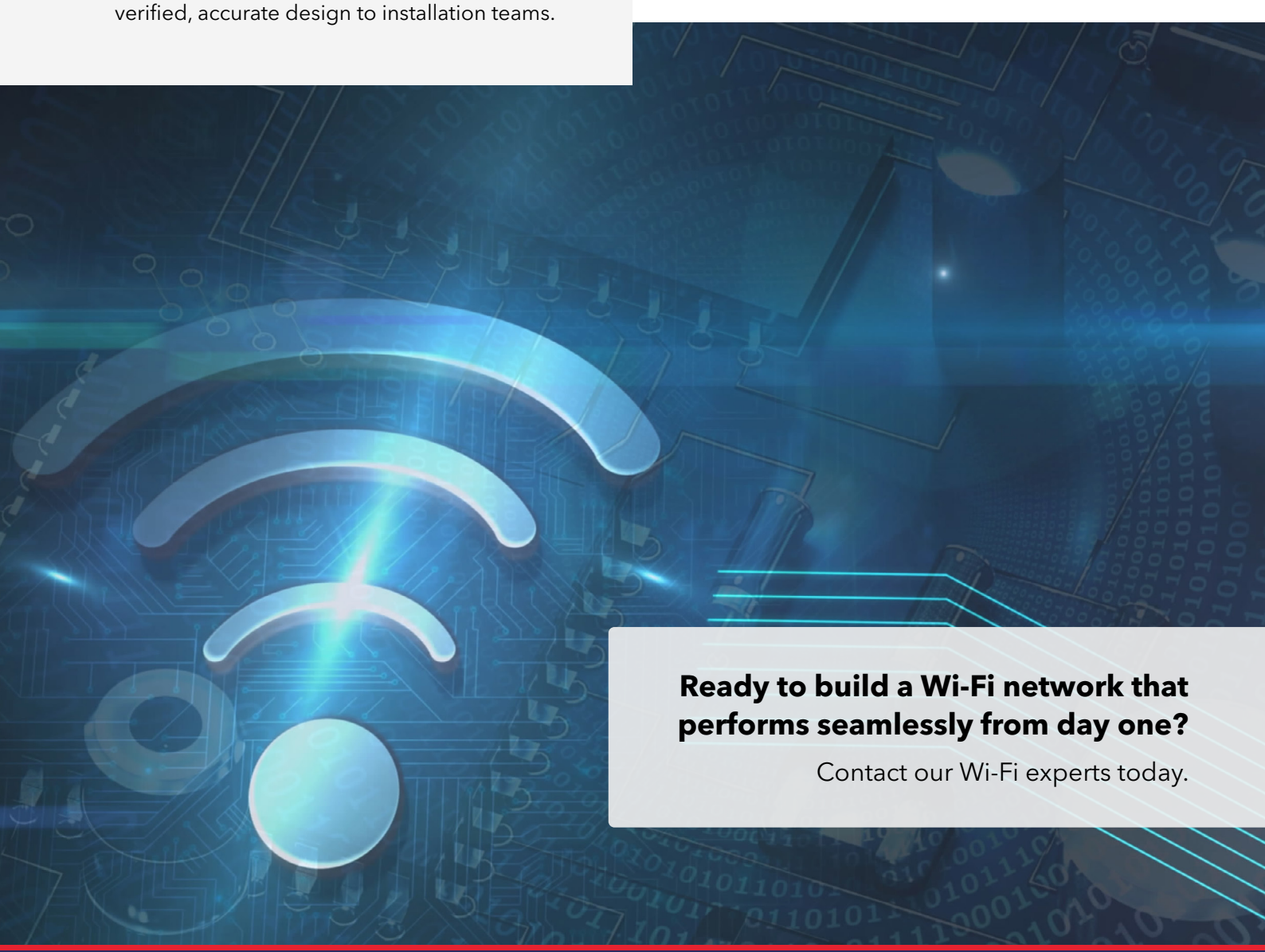
Benefits of using CACI for predictive Wi-Fi design

- Ensure optimal Wi-Fi coverage and capacity by designing a network that effortlessly exceeds your connectivity requirements.
- Reduce deployment costs and time by accurately determining the exact number and optimal placement of APs before running any cable.
- Future-proof your network with design support for the latest Wi-Fi standards, including Wi-Fi 6 / 6E (802.11ax) and Wi-Fi 7 (802.11be).
- Simplify complex planning with AI-driven automation for AP placement and configuration.
- Gain visibility into network health with clear heatmaps for Signal Strength, Signal-to-Noise Ratio (SNR), and Channel Interference. Improve network reliability by identifying and mitigating potential non-Wi-Fi interference sources.
- Accelerate network deployments by providing a verified, accurate design to installation teams.

Your predictive Wi-Fi design process

CACI's expert Wi-Fi consultants begin by taking your floor plan and defining your specific business requirements for coverage, capacity and supported devices. Ekahau AI Pro is then used to virtually model your environment and simulate the RF propagation of over 4,500 different access points and antennas from all major vendors.

The AI Auto-Planner and simulation tools automatically calculate and visualise the ideal AP placement, power levels and channel configuration. The resulting output is a highly precise network design, a verified "blueprint" that guarantees your Wi-Fi will deliver the speed and reliability required to support your next-generation applications.



Ready to build a Wi-Fi network that performs seamlessly from day one?

Contact our Wi-Fi experts today.

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