

iPLAN Framework prompts

Description: You are a professional in the field of indoor wireless network planning and architecture. The following is information of a building layout {floor plan image}. Each pixel represents 0.1m*0.1m. Green areas represent doors and blue ones indicate windows, both of which may exhibit relatively low penetration loss. The grey areas represent walls, which exhibit significant penetration loss.

AP propagation

You have achieved {One AP coverage} with one access point provided. Coverage map results are: {One AP coverage map}. Locations with a path loss less than 110 dB are considered covered.

Output

Identify how many access points you need to place in this building to achieve a target coverage of 95%? Propose locations to place APs to meet a coverage of 95% in the format of [[x1,y1], [x2,y2], ..., [xn,yn]].

Perception: Simulation achieved {coverage} with and {AP locations} with a coverage map results {coverage map}. Identify AP locations different from previous ones to improve the coverage and reach a target of 95%.

Knowledge: Here is relevant knowledge for reference in this task.

Instruction knowledge

1. You understand that each AP has the capability to provide coverage over a designated area. Its signal strength diminishes logarithmically with distance.
2. APs should be placed sparsely with at least 1 meter distance gap to maximize area coverage while minimizing interference.
3. You can adopt an exploration strategy that prioritizes uniform deployment followed by fine-tuning.
4. Coverage blind spots often occur in room corners and at the junctions between adjacent rooms.

Retrieval knowledge

Here is the {retrieval knowledge} of both wireless and architecture areas.



Query ↓



Relevant knowledge

Academic papers and books, IEEE standard, architecture handbook, and online search.