# OPTIMASI PENATAAN ACCESS POINT PADA JARINGAN NIRKABEL DI UNDIKSHA MENGGUNAKAN ALGORITMA SIMULATED ANNEALING (SA)

**(Studi Kasus: Gedung Auditorium Undiksha)**

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## ABSTRAK

Optimasi penataan *access point* adalah salah satu permasalahan dalam bidang pengembangan infrastruktur jaringan. Dalam optimasi tersebut memerlukan suatu analisis sebelum diimplementasikan. Tujuan optimasi pada *access point* yaitu mendeskripsikan penerapan algoritma *Simulated Annealing* (SA) dalam optimasi penataan a*ccess point* pada jaringan nirkabel di Auditorium Undiksha dan mengukur perbedaan sebelum dan sesudah dilakukan optimasi. Metode yang digunakan dalam penelitian ini adalah SADTC yang tediri dari 5 tahapan, yaitu *Studies, Analysis, Design, Testing, dan Conclusion*. Dalam tahapan *design* dari metode tersebut digunakan 2 kondisi yaitu pemodelan sistem berdasarkan kondisi sebenarnya dan pemodelan sistem berdasarkan algoritma *Simulated Annealing.* Hasil dari 2 kondisi dengan 3 *access point* yang berbeda diperoleh persentase *coverage area* awal sebesar 11% dan ketika diterapkannya algoritma *Simulated Annealing* hasilnya berupa 10 titik koordinat dari 3 *access point* yang berbeda serta nilai *coverage area* dengan rata-rata persentase sebesar 20% untuk *access point*1, 18% untuk *access point*2, dan 20% untuk *access point*3. Dari hasil penelitian tersebut diharapkan mampu menentukan pemodelan yang sesuai saat mengimplementasikan optimasi penataan *access point pada* jaringan *Nirkabel* menggunakan algoritma *Simulated Annealing*

Kata kunci: ***Optimasi, Access Point, INSSIDER, Coverage Area, Simulated Annealing.***

**OPTIMIZATION OF ACCESS POINT ARRANGEMENT IN WIRELESS NETWORK IN UNDIKSHA USING SIMULATED ANNEALING (SA) ALGORITHM**

**(Case Study: Undiksha Auditorium Building)**

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## ABSTRACT

Optimization of the arrangement of access points is one of the problems in the development of network infrastructure. In such optimization requires analysis before it is implemented. The purpose of optimization of the access point that describes the application of the algorithm Simulated Annealing (SA) in the optimization of the arrangement of the access point on the wireless network at the Undiksha Auditorium and measures the difference before and after optimization. The method used in this study is SADTC consisting of five stages, namely Studies, Analysis, Design, Testing, and Conclusion. In the design stage of the method two conditions are used namely, the modeling system based on the actual conditions and the algorithm based modeling system on Simulated Annealing. The results of these 2 conditions with three access points that differ obtained the percentage coverage area beginning at 11% and when the implementation of the algorithm Simulated Annealing result is a 10-point coordinates of the three access points are different as well as the value of the coverage area with an average percentage of 20% for access points1, 18% to access points2, and 20% for access points3. The results of these studies are expected to determine the appropriate modeling while implementing an optimization arrangement for Wireless access points on the network using a Simulated Annealing algorithm.

**Keywords:** *optimization*, Access Point, inSSIDer, Coverage Area, Simulated Annealing.