

“02548_02984_03121”

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“A Proposal of Routing Algorithm under Practical Conditions for Wireless Internet-Access Mesh Networks ”

“Practical Conditions faced in Paper”

1. Multiple Gateways for large sized Wireless Internet-Access Mesh Network.
2. Long Distance decreases signal quality so the link speed is also decreased.
3. Limitation on the number of Hops used between a Gateway and a Host.

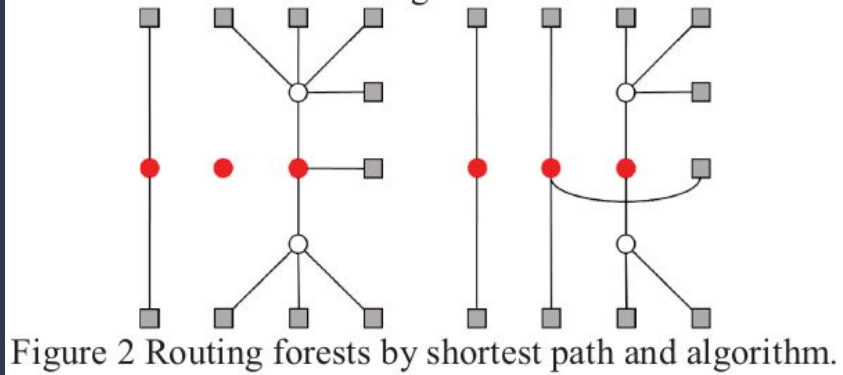
“Solutions Proposed in the Paper”

- ❖ A Set of Routing Trees or a Routing Forest where every Root Node acts as Gateway.
 - Hop Count Constraint used.
 - Objective Function that minimizes total transmission time for the Bottleneck Gateway.
- ❖ Routing Graph Algorithm
 - Extracts the Routing Forest that follows all constraints and optimizes the objective.
- ❖ Routing Graph Algorithm Stages
 - First stage : Sequentially selects the shortest path between any Host to one Gateway.
 - Second stage : Balances the Load Balance by local search method.

“Routing Algorithm”

1. Inputs :
 - a. Network Topology
 - b. Set of Nodes
 - c. Node Type
 - d. Node Location Coordinates
 - e. Set of Links Between Nodes
 - f. Link Speed Equation of IEEE 802.11ac
 - g. Link Speed Threshold for Interfaces
2. Constraints :
 - a. Host Covering constraint
 - b. Hop Count Constraint
 - c. Node Type Connection Constraint
 - d. Any Host must be a Leaf
 - e. Unique Routing Constraint
3. Cost Function
4. Algorithms Procedure

“Topology Used for Experiment”



“Results of Experiment”

Table I Throughput results (Mbps).

topology	AP	host	proposal	shortest path
1	5	3	635.66	496.78
2	5	10	658.47	436.80
3	5	15	650.85	501.76

“A Proposal of Routing Algorithm under Practical
Conditions for Wireless Internet Access Mesh Networks”

<https://ieeexplore.ieee.org/document/6904085>

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