

Bahan Ajar

Chapter 9



Materi Pembelajaran

Matakuliah :

WIRELESS SENSOR NETWORKS

Kode Matakuliah : SKO 20428

Prodi : **SISTEM KOMPUTER**

Dosen Pengampu Matakuliah:

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Tables of Content

Routing Protokol Source Initiated

- Dynamic Source Routing (DSR)
- Route Discovery
- Route Request
- Route Reply

Tugas Mandiri



Dynamic Source Routing (DSR)

One of the most widely referred routing algorithms is Dynamic Source Routing (DSR), which is an “on-demand” routing algorithm and it has route discovery and route maintenance phases.



Dynamic Source Routing (DSR)

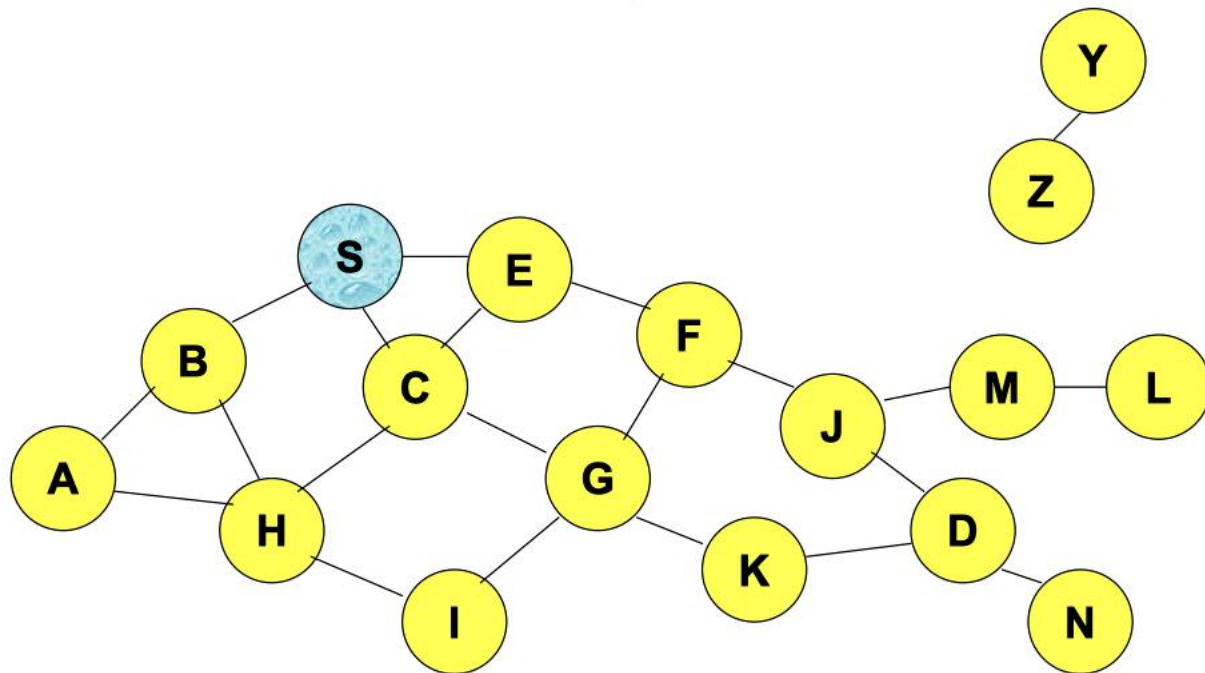
When node S wants to send a packet to node D, but does not know a route to D, node S initiates a route discovery

Source node S floods Route Request (RREQ)

Each node appends own identifier when forwarding RREQs.

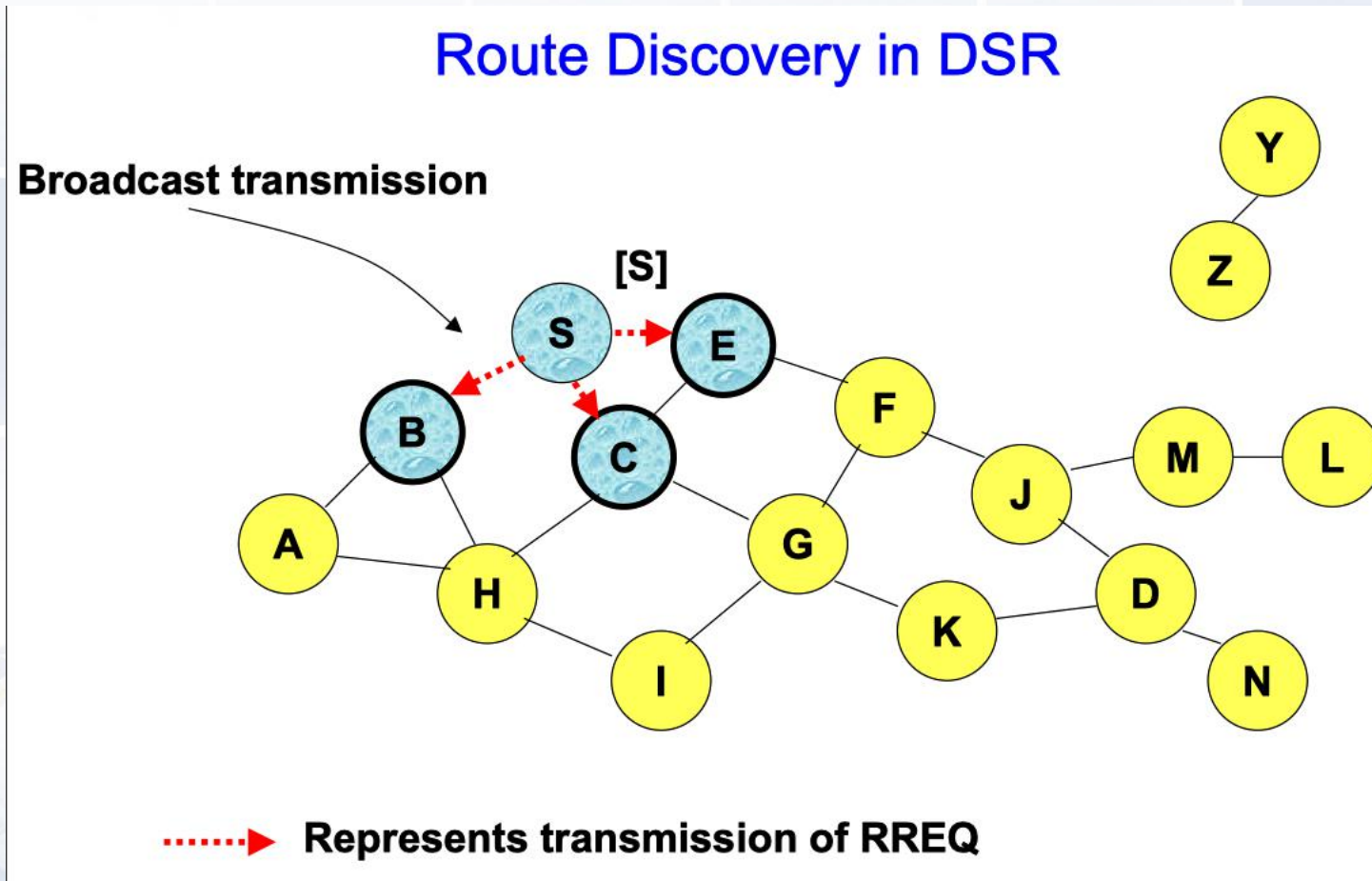
Dynamic Source Routing (DSR)

Route Discovery in DSR



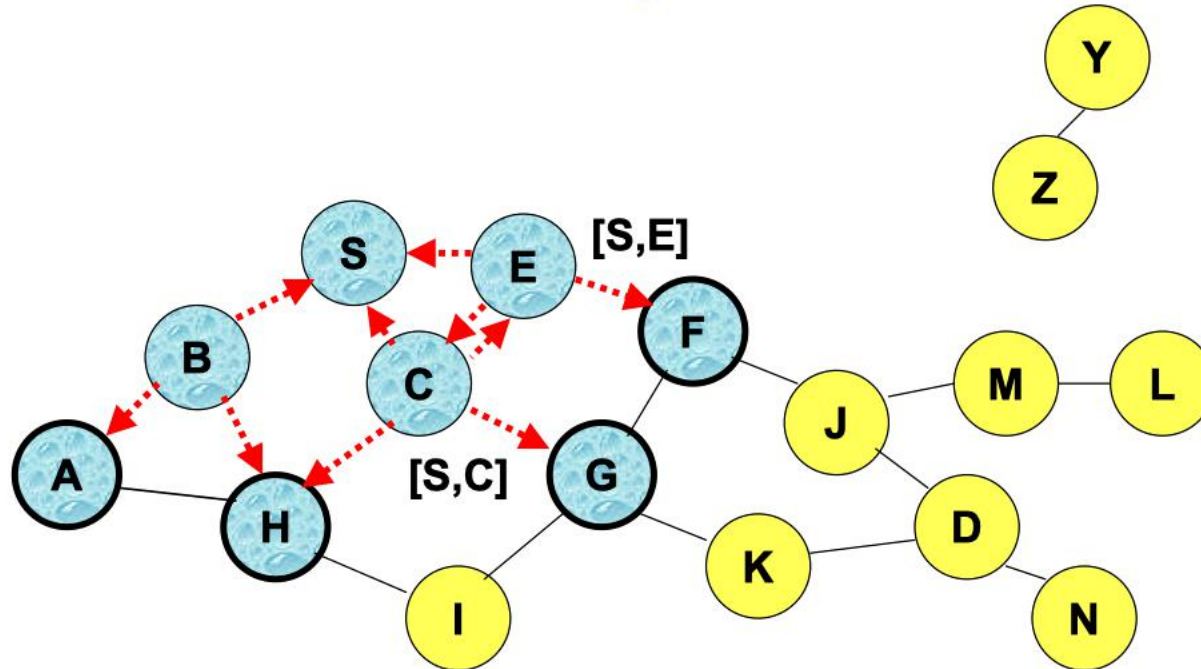
Represents a node that has received RREQ for D from S

Dynamic Source Routing (DSR)



Dynamic Source Routing (DSR)

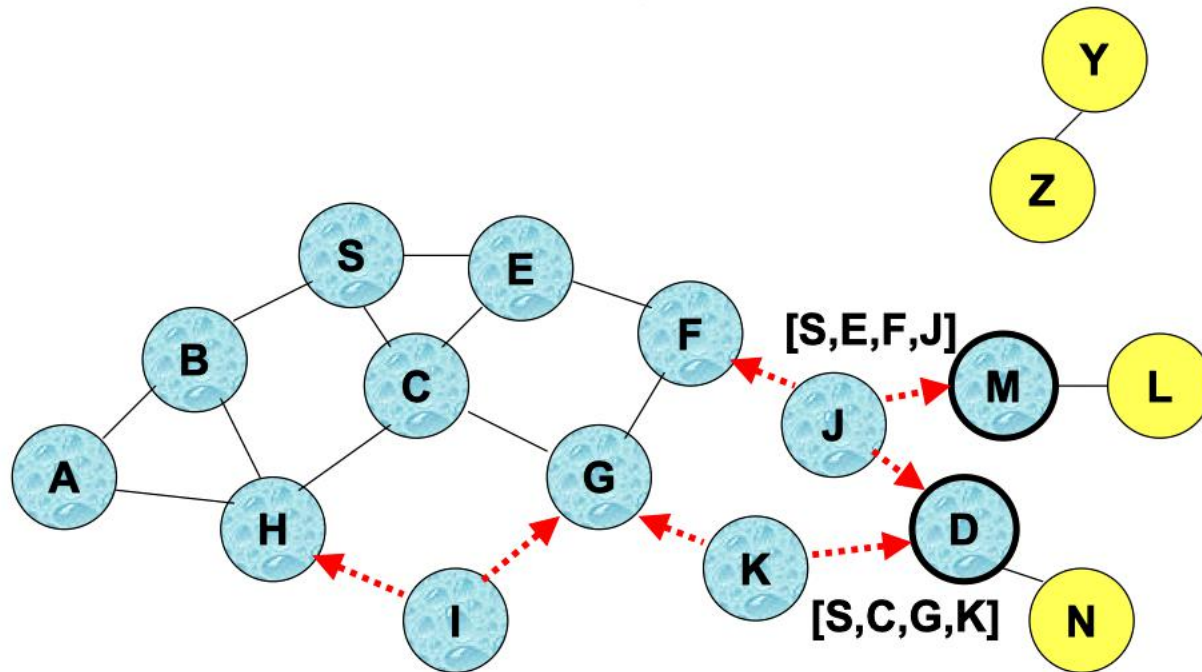
Route Discovery in DSR



- **Node H receives packet RREQ from two neighbors:**
potential for collision

Dynamic Source Routing (DSR)

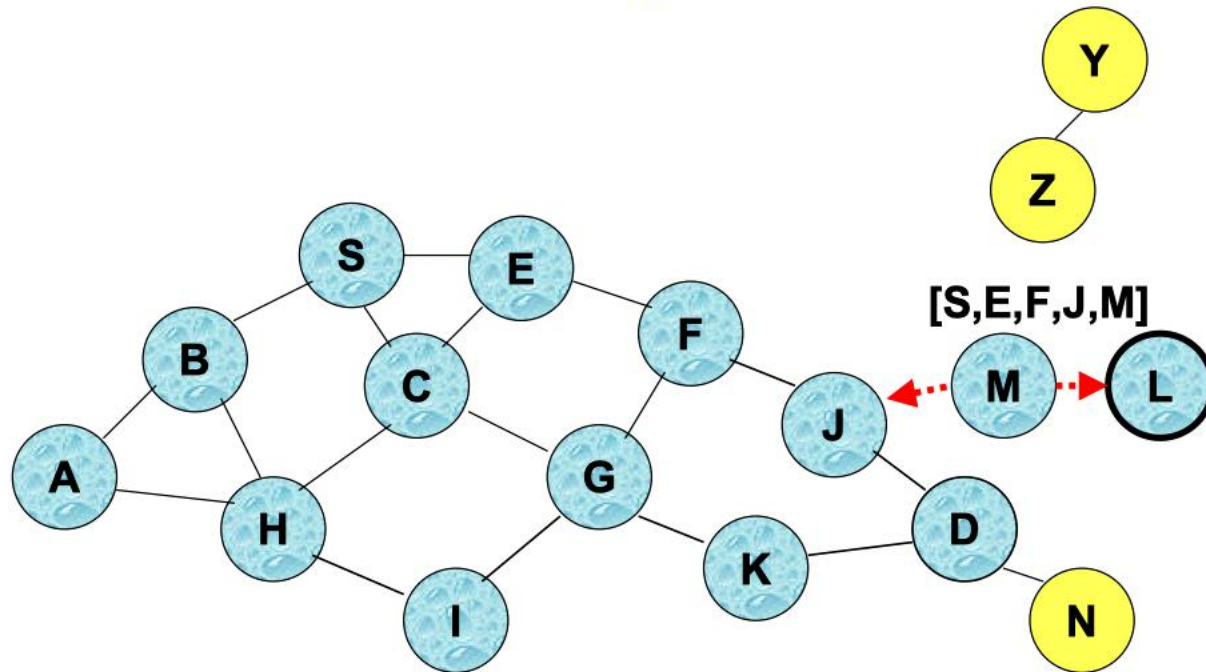
Route Discovery in DSR



- Nodes J and K both broadcast RREQ to node D
- Since nodes J and K are **hidden** from each other, their **transmissions may collide**

Dynamic Source Routing (DSR)

Route Discovery in DSR



- Node D **does not forward** RREQ, because node D is the **intended target** of the route discovery

Dynamic Source Routing (DSR)

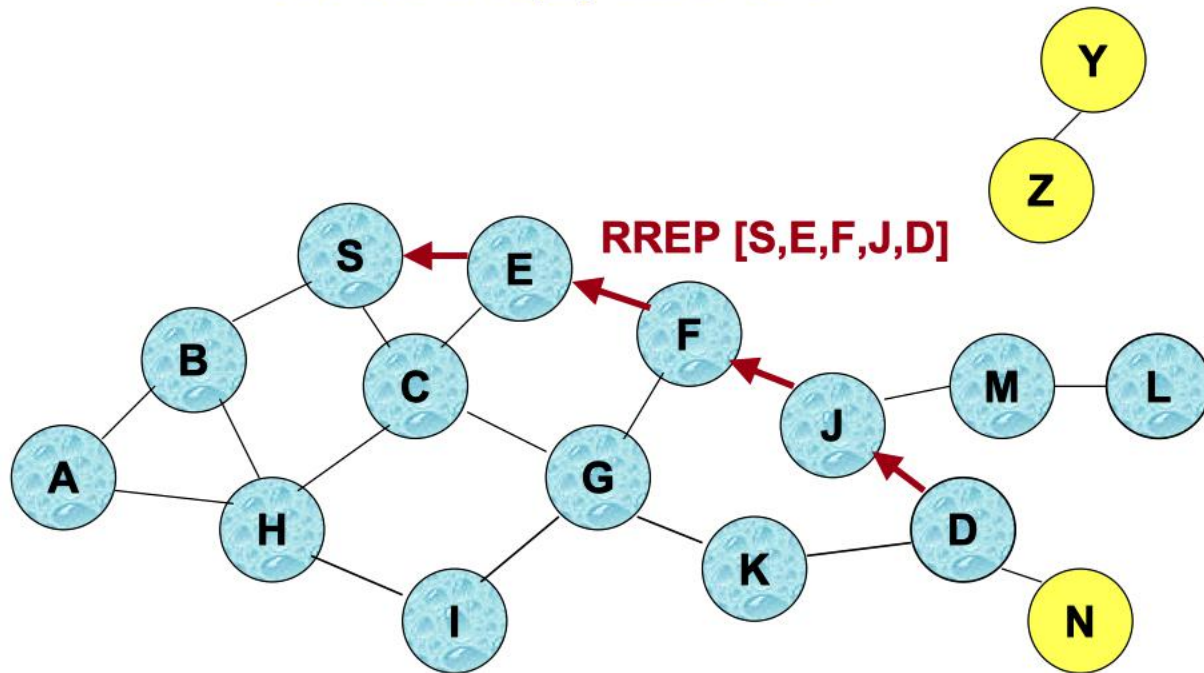
Destination D on receiving the first RREQ, sends a Route Reply (RREP)

RREP is sent on a route obtained by reversing the route appended to received RREQ

RREP includes the route from S to D on which RREQ was received by node D

Dynamic Source Routing (DSR)

Route Reply in DSR



← Represents RREP control message

Dynamic Source Routing (DSR)

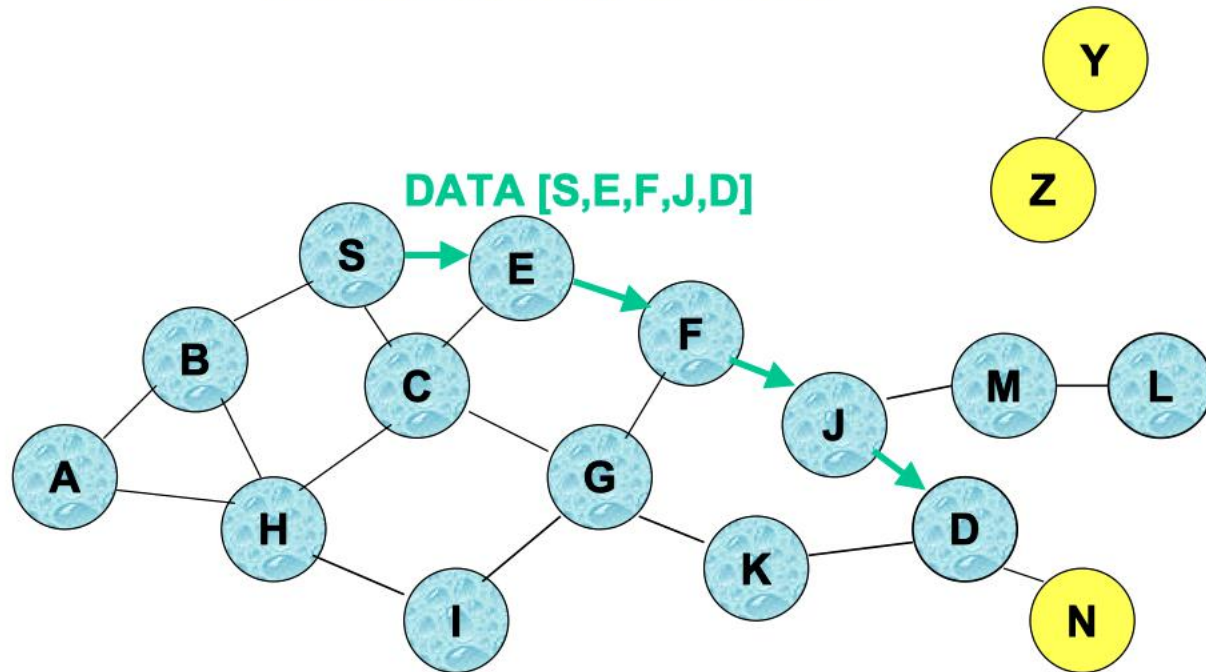
Node S on receiving RREP, caches the route included in the RREP

When node S sends a data packet to D, the entire route is included in the packet header hence the name source routing

Intermediate nodes use the source route included in a packet to determine to whom a packet should be forwarded

Dynamic Source Routing (DSR)

Data Delivery in DSR



Packet header size grows with route length

Tugas Mandiri (teori):

1. Jelaskan cara kerja protokol DSR.
2. Apa keuntungan dan kerugian menggunakan protokol DSR? Jelaskan.

Tugas Mandiri (praktikum):

Rancang komunikasi Ad Hoc node dengan menggunakan protokol DSR di Network Simulator.

end

