

Bahan Ajar

Chapter 10



Materi Pembelajaran

Matakuliah :

# WIRELESS SENSOR NETWORKS

Kode Matakuliah : SKO 20428

Prodi : **SISTEM KOMPUTER**

Dosen Pengampu Matakuliah:

Bayu Nugroho, S.Kom., M.Eng

# Tables of Content

## Routing Protokol Source Initiated

- Ad hoc On-demand Distance Vector (AODV)
- Route Discovery
- Reserve Path Setup
- Route Reply
- Data Delivery

Tugas Mandiri

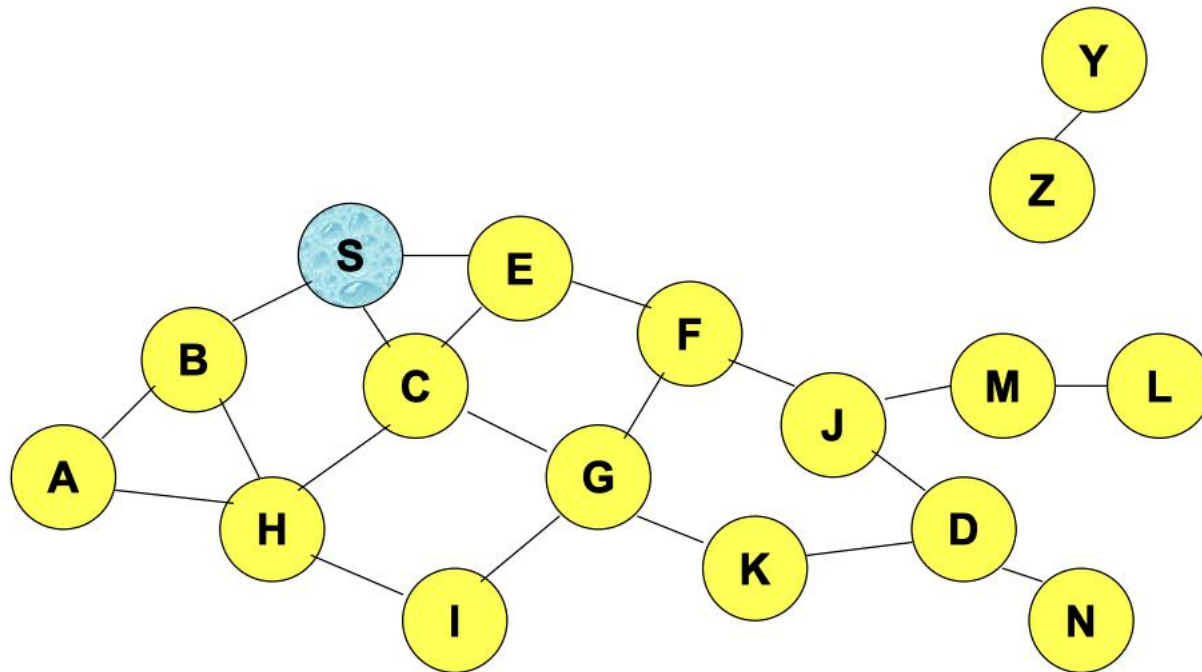
# Ad hoc On-demand Distance Vector (AODV)

The aim of AODV is to reduce the number of broadcast messages sent through out the network by discovering routes on-demand instead of keeping a complete up-to-date route information



# Ad hoc On-demand Distance Vector (AODV)

## Route Requests in AODV

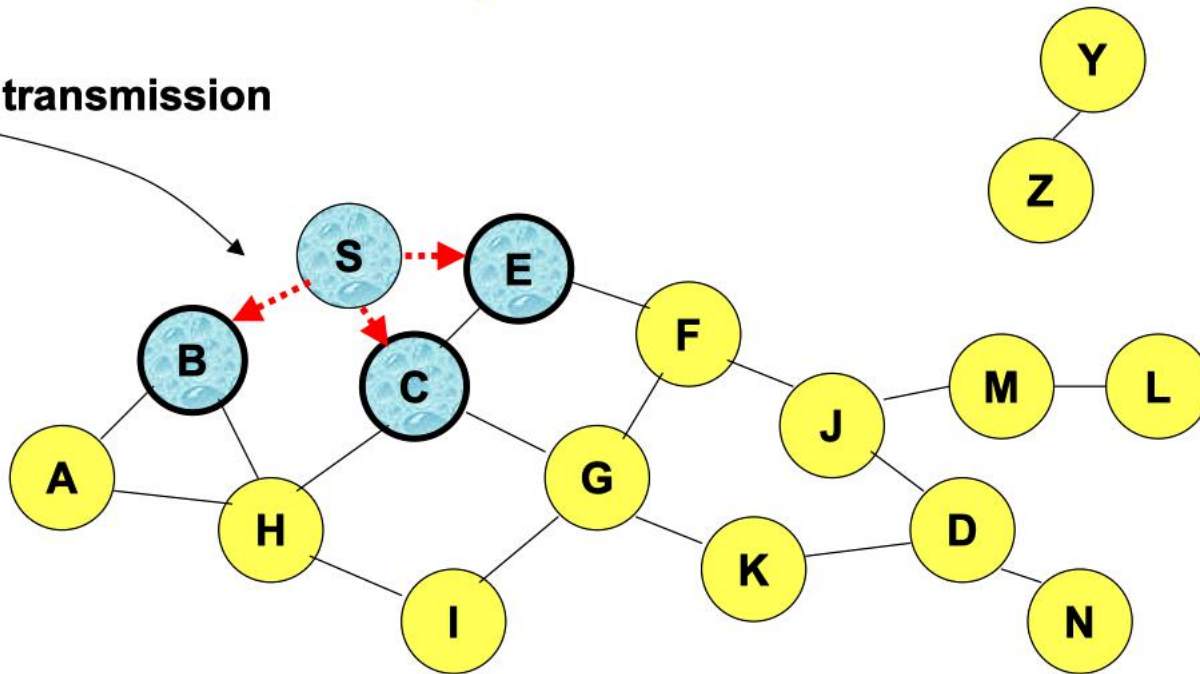


**Represents a node that has received RREQ for D from S**

# Ad hoc On-demand Distance Vector (AODV)

## Route Requests in AODV

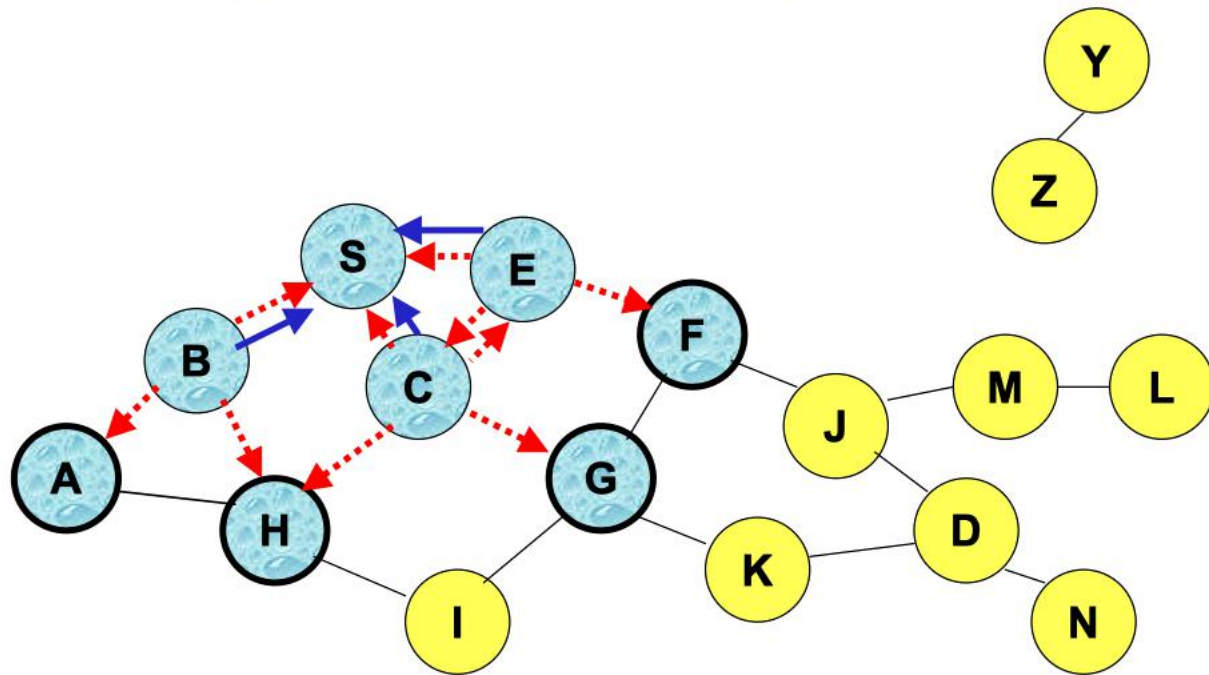
Broadcast transmission



.....▶ Represents transmission of RREQ

# Ad hoc On-demand Distance Vector (AODV)

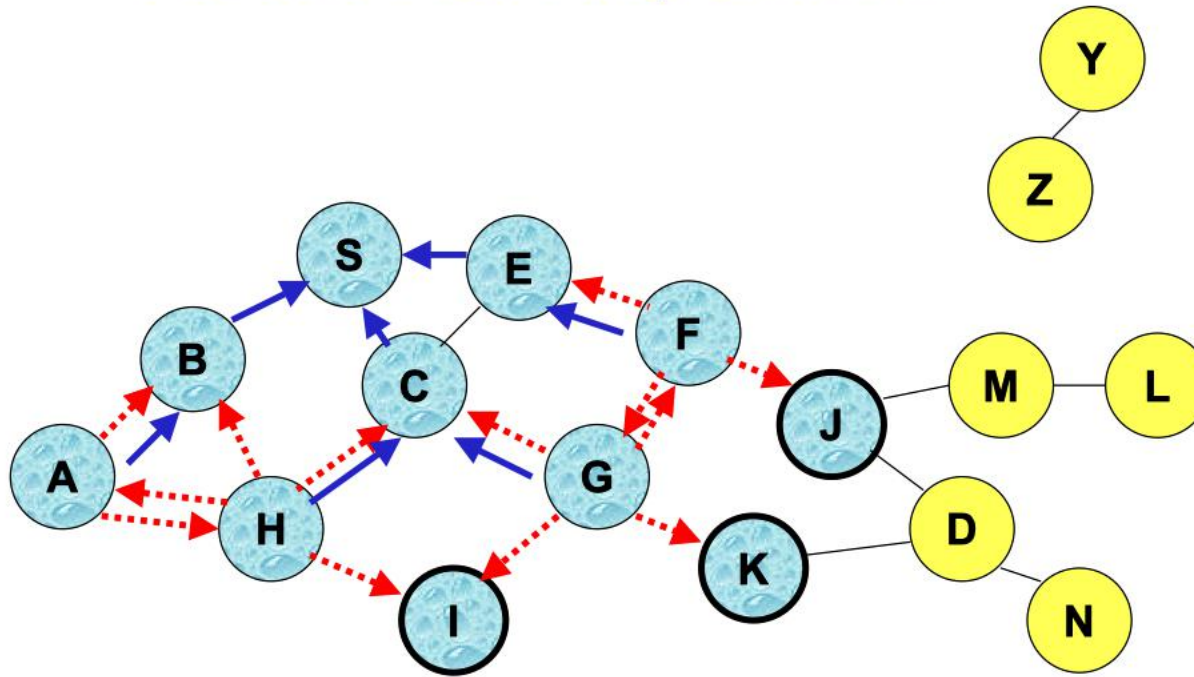
## Route Requests in AODV



← Represents links on Reverse Path

# Ad hoc On-demand Distance Vector (AODV)

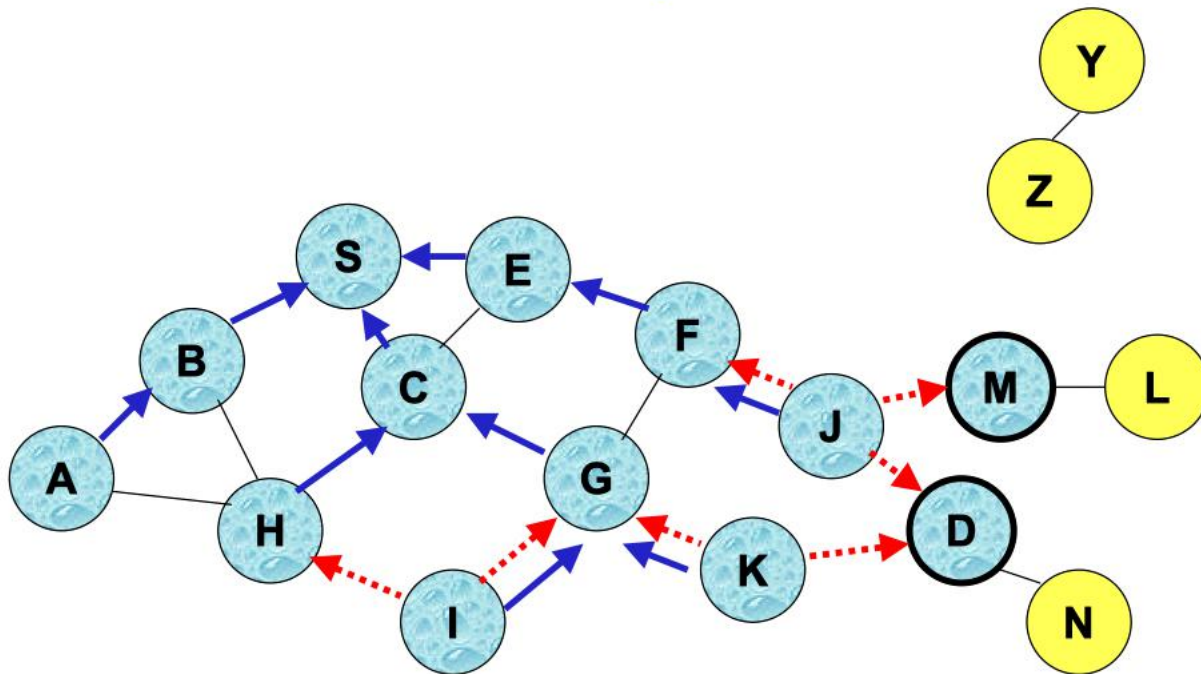
## Reverse Path Setup in AODV



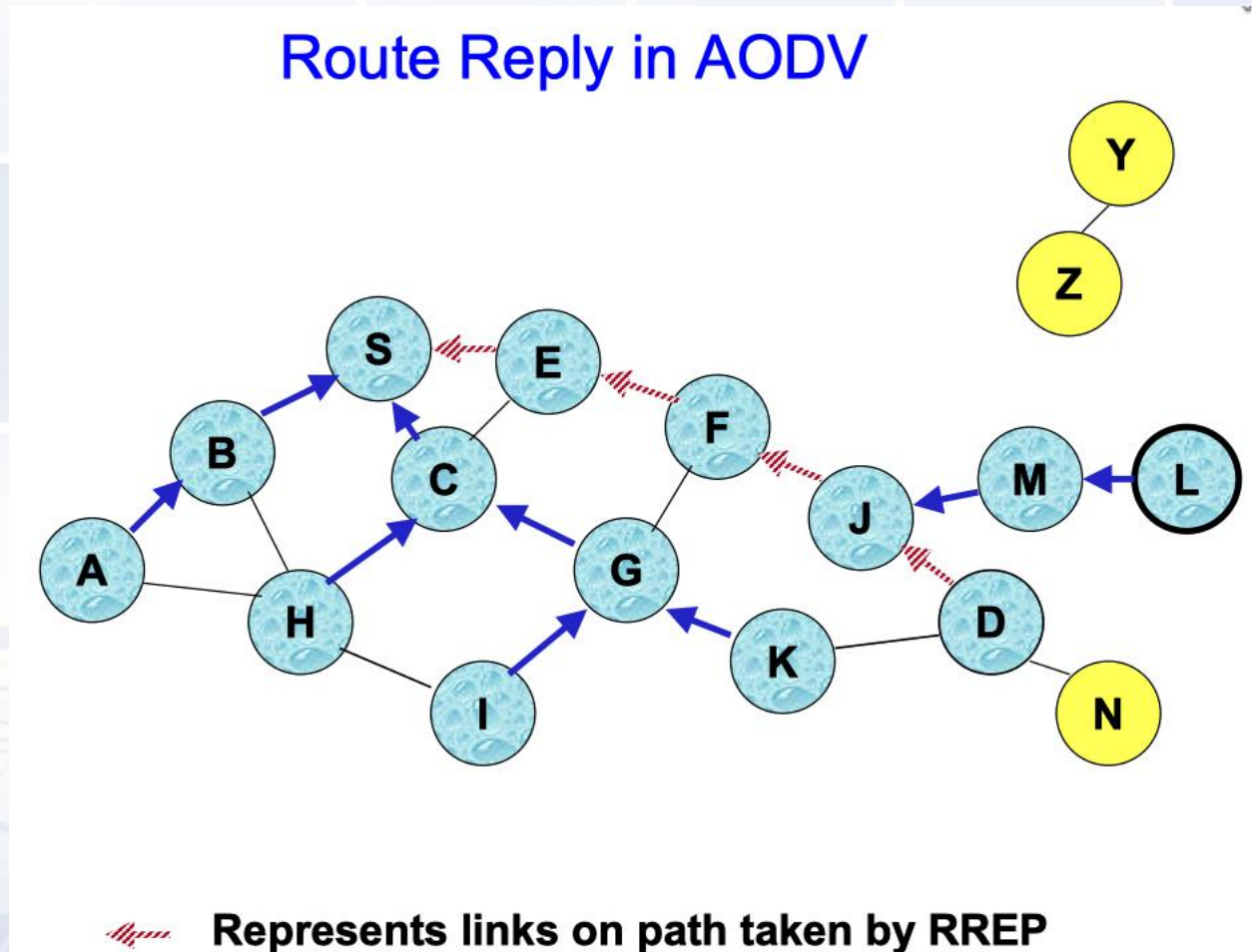
- Node C receives RREQ from G and H, but does not forward it again, because node C has **already forwarded RREQ** once

# Ad hoc On-demand Distance Vector (AODV)

## Reverse Path Setup in AODV

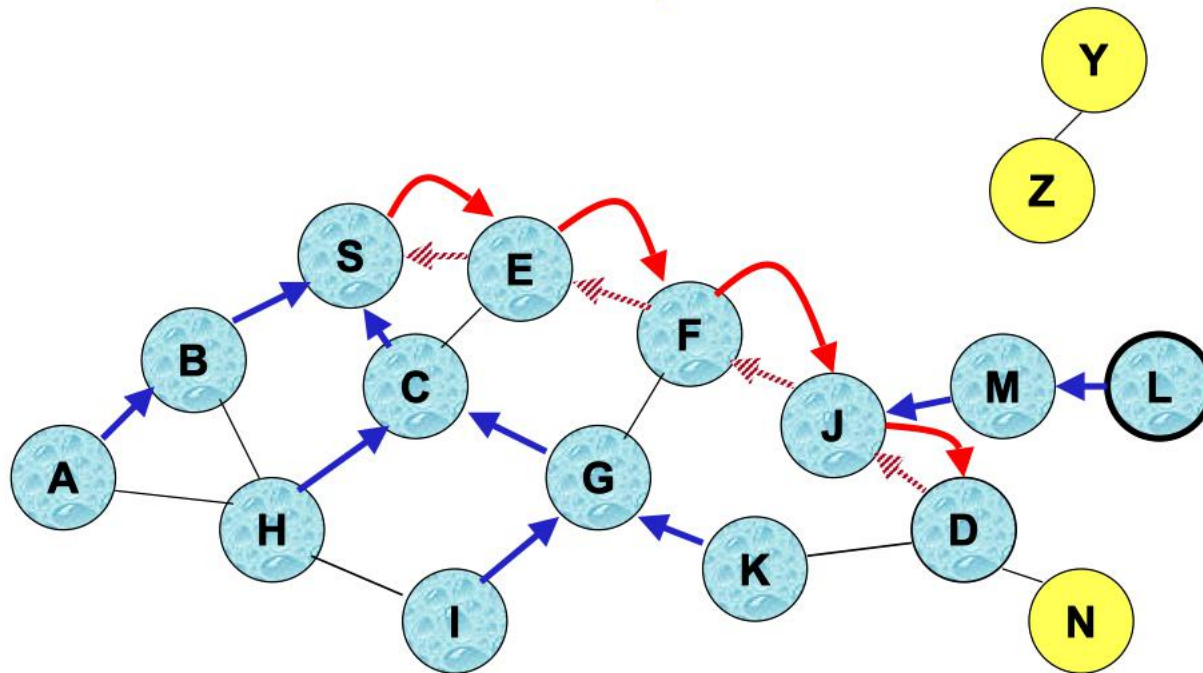


# Ad hoc On-demand Distance Vector (AODV)



# Ad hoc On-demand Distance Vector (AODV)

## Forward Path Setup in AODV



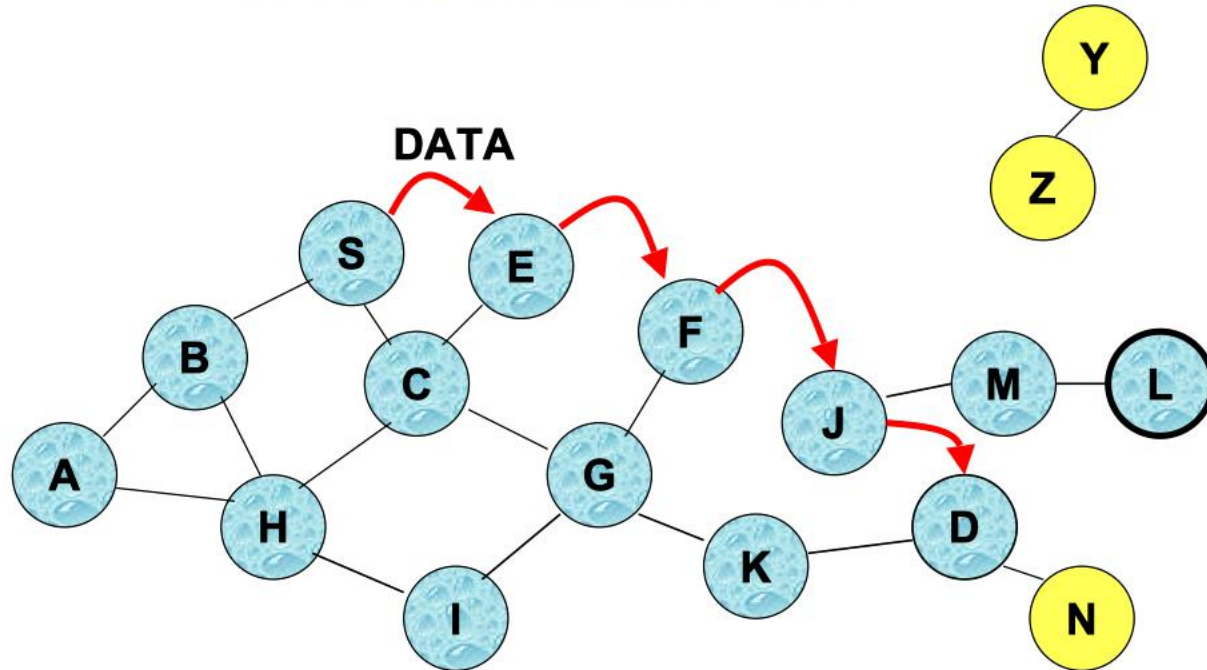
**Forward links are setup when RREP travels along the reverse path**



**Represents a link on the forward path**

# Ad hoc On-demand Distance Vector (AODV)

## Data Delivery in AODV



Routing table entries used to forward data packet.

Route is *not* included in packet header.

## Ad hoc On-demand Distance Vector (AODV)

A routing table entry maintaining a reverse path is purged after a timeout interval.

timeout should be long enough to allow RREP to come back

A routing table entry maintaining a forward path is purged if not used for a `active_route_timeout` interval iif no is data being sent using a particular routing table entry, that entry will be deleted from the routing table (even if the route may actually still be valid)

## Tugas Mandiri (teori):

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

## Tugas Mandiri (praktikum):

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

**end**

