



---

ALBERT-LUDWIGS-  
UNIVERSITÄT FREIBURG

---

# Algorithms for Radio Network

## Hybrid Protocol: ZRP

University of Freiburg  
Technical Faculty  
Computer Networks and Telematics  
Prof. Christian Schindelhauer



# Zone Routing Protocol (ZRP)

- ▶ **Haas 1997**
  - *A new routing protocol for the reconfigurable wireless networks*, Proc. of IEEE 6th International Conference on Universal Personal Communications, 562–566
- ▶ **Zone Routing Protocol combine**
  - Proactive protocol
    - for local routing
  - reactive protocol
    - for global routing

# ZRP

- ▶ **Routing zone of a node x**
  - Nodes in a given maximum hop-distance d
- ▶ **Peripheral nodes**
  - all nodes have exactly the hop-distance d have
  - within the routing zone x

# ZRP

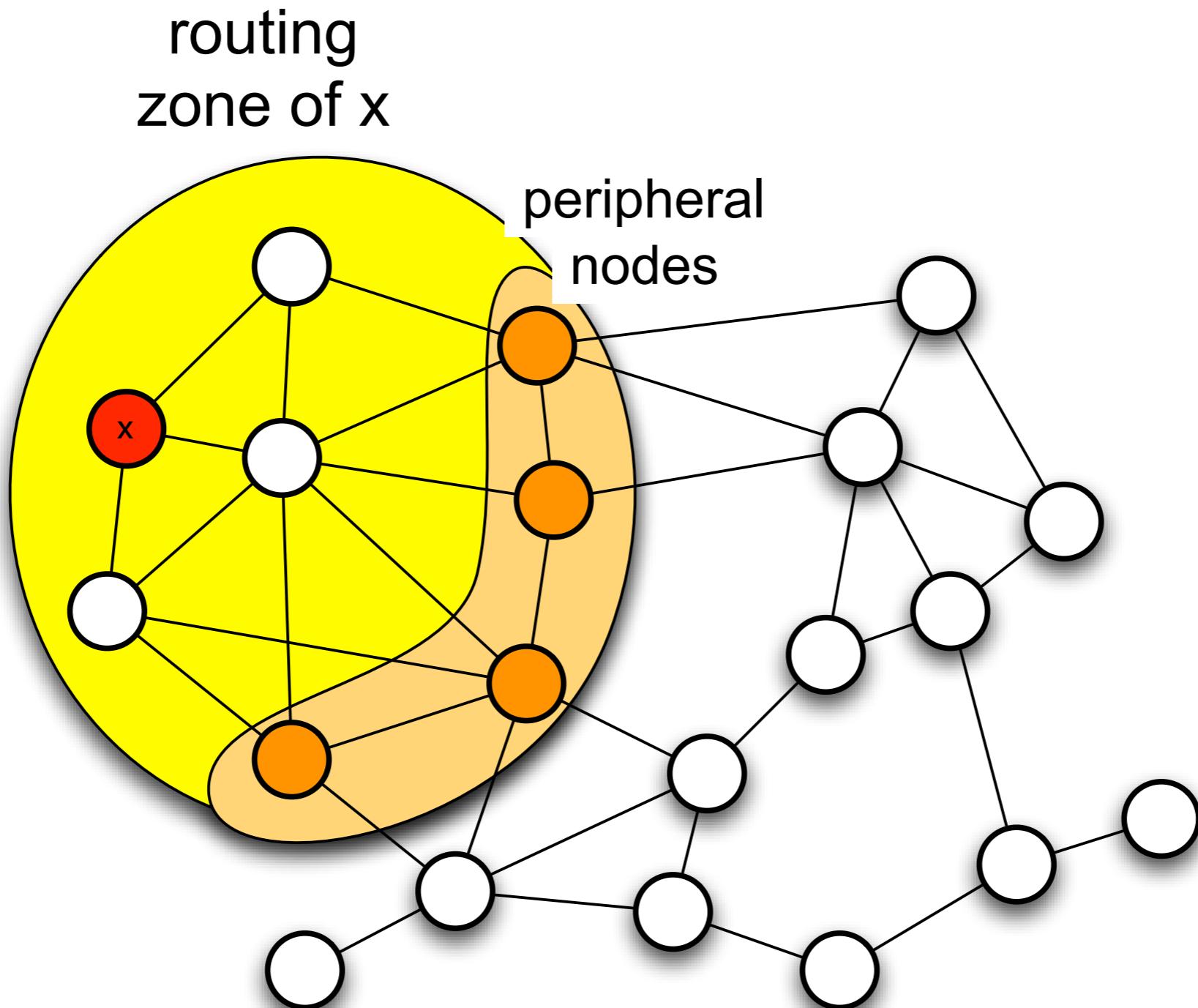
- ▶ **Intra zone routing**

- proactive update the connection information in the routing zone of node
  - e.g. with link state or distance vector protocols

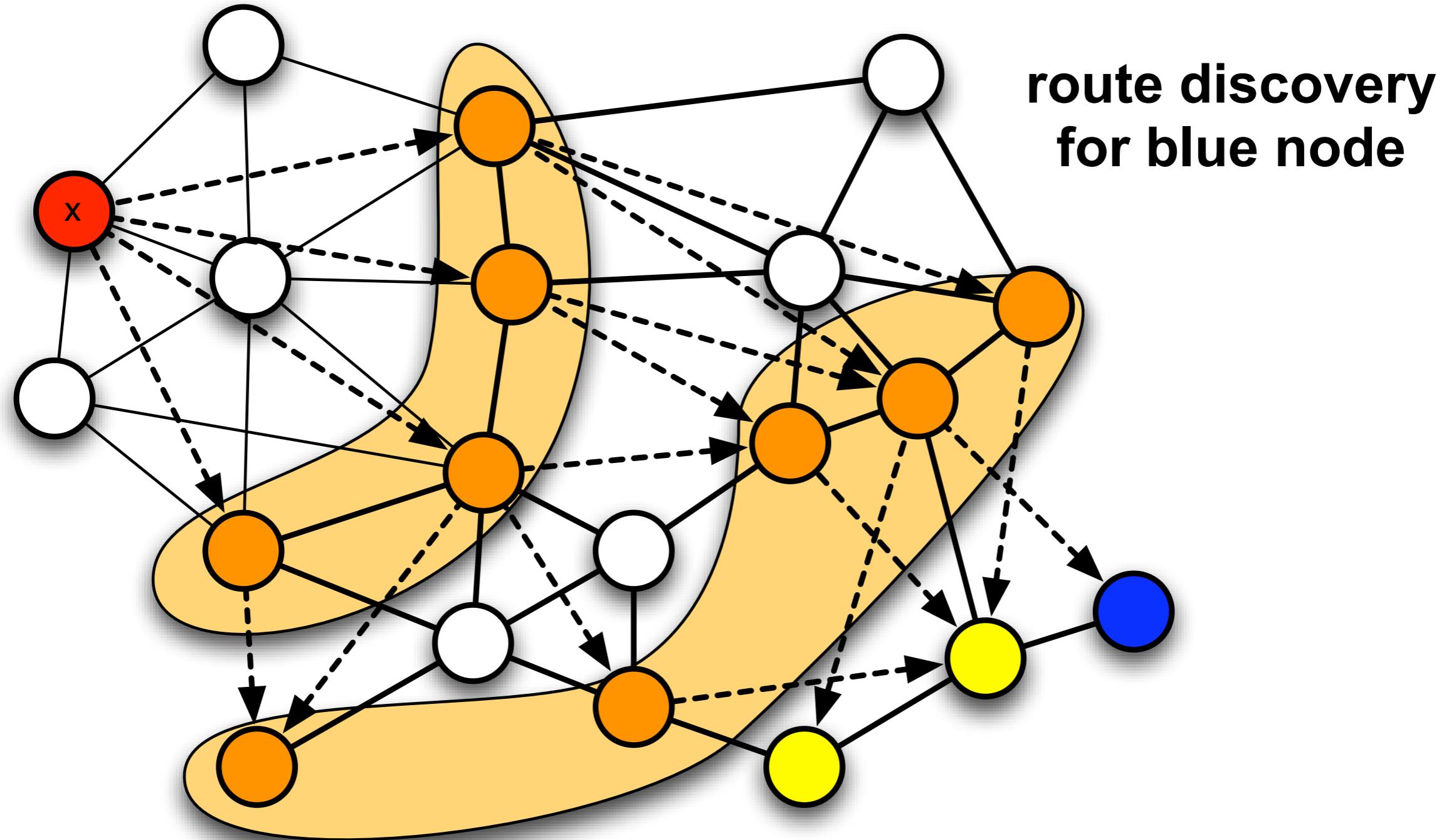
- ▶ **Inter zone routing**

- Reactive route discovery is used for distant / unknown nodes
- Procedure similar to DSR
- Only peripheral nodes reach further information

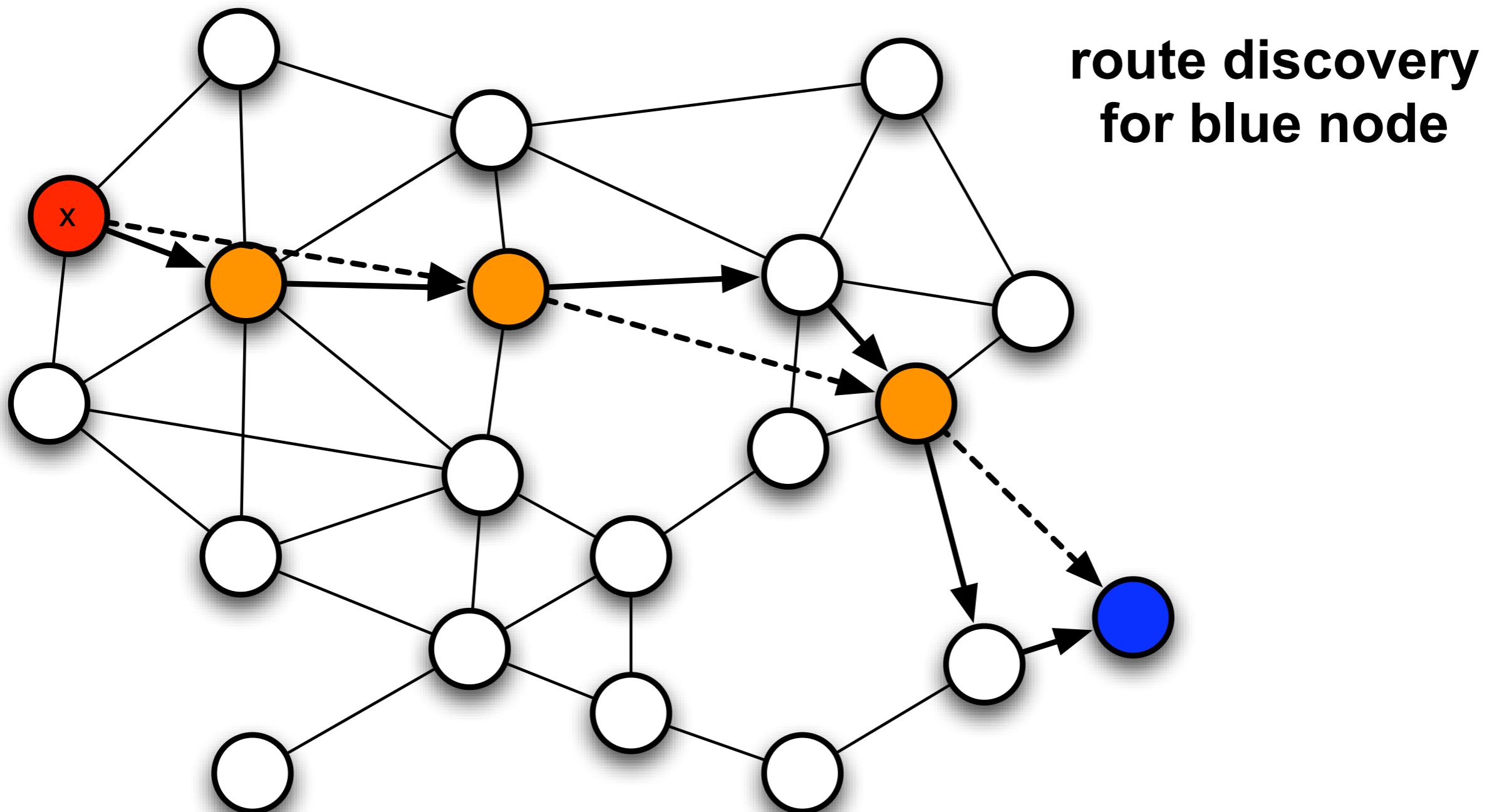
# ZRP: Example with radius d=2



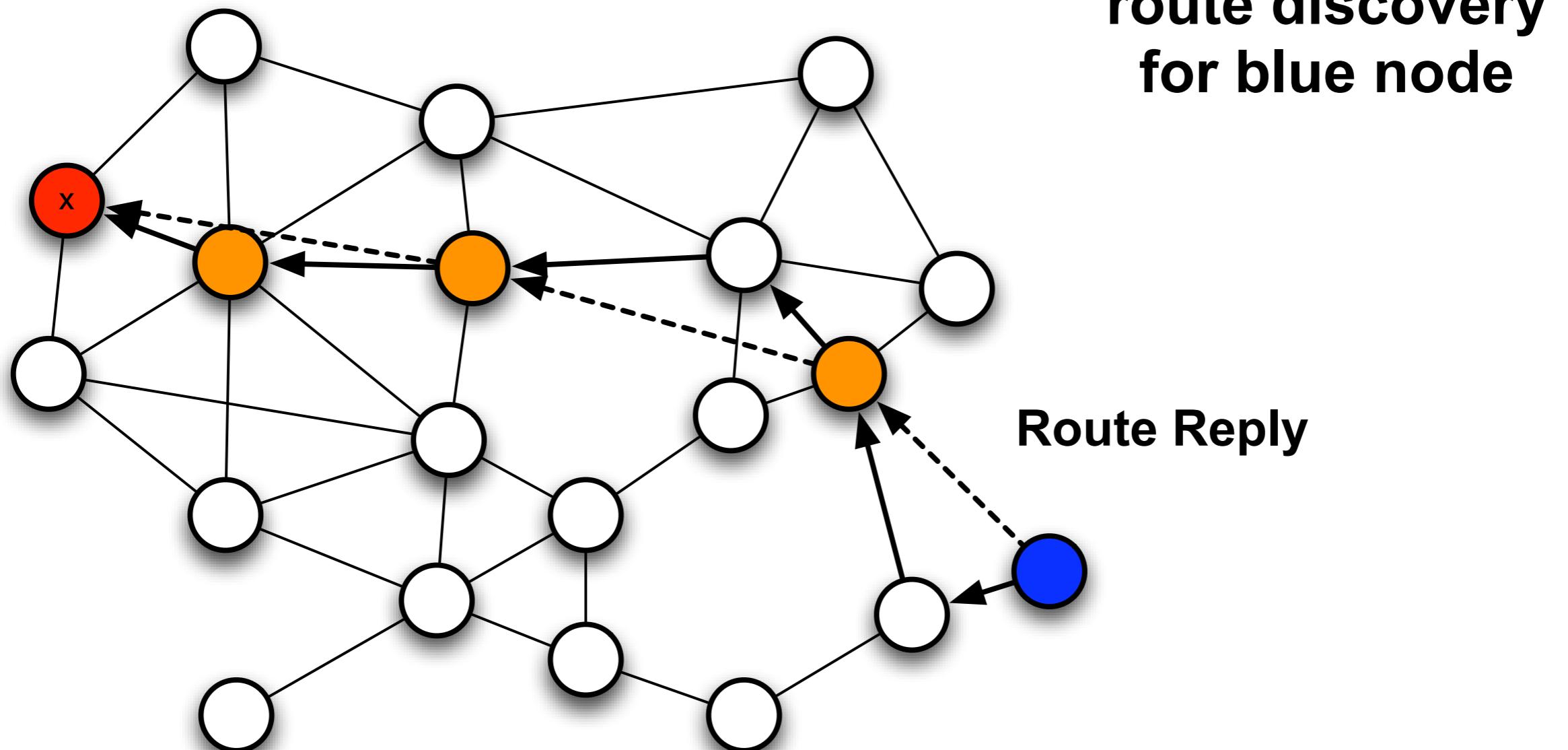
# ZRP: Example with radius d=2



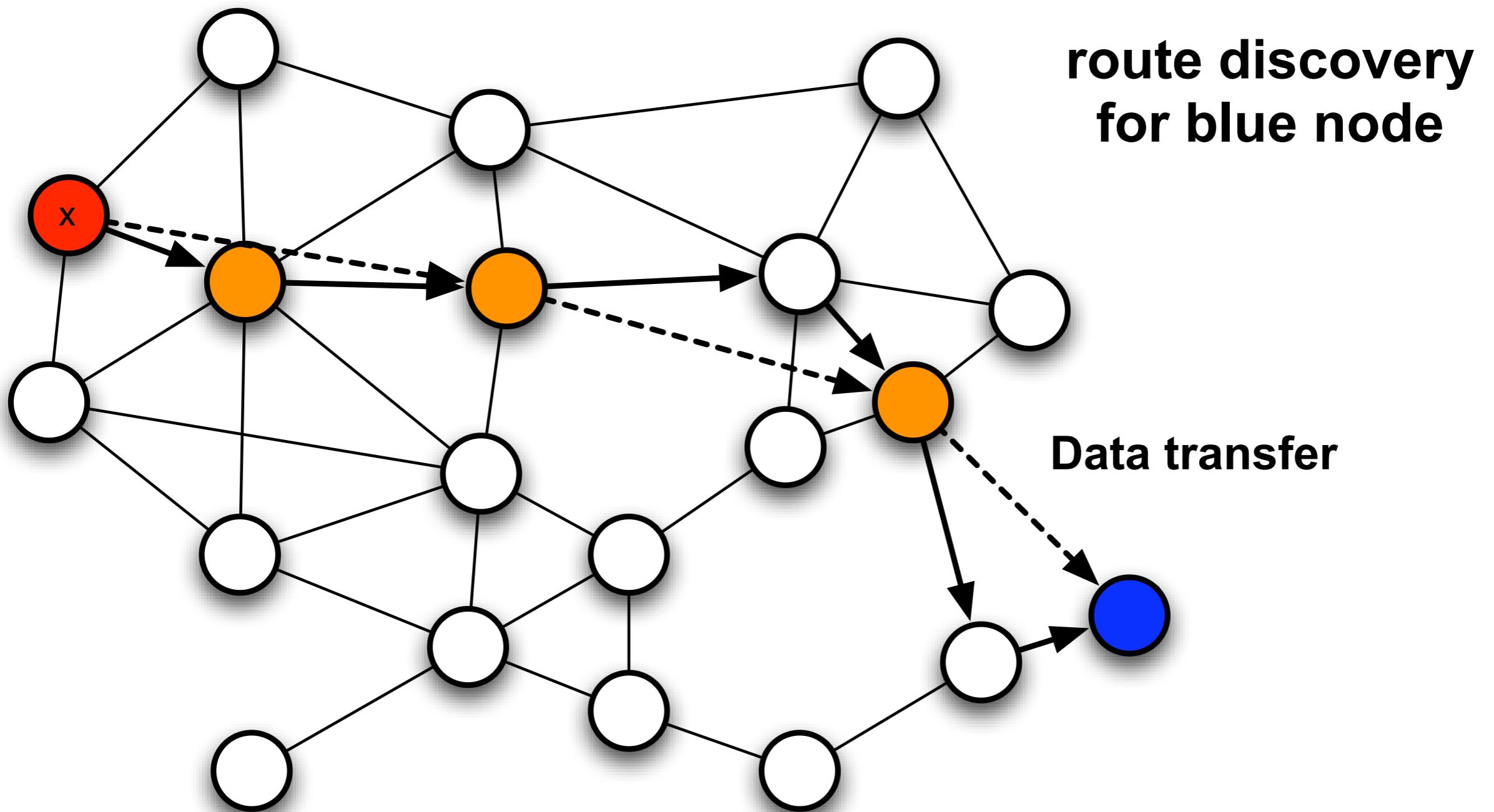
# ZRP: Example with radius d=2



# ZRP: Example with radius d=2



# ZRP: Example with radius d=2





---

ALBERT-LUDWIGS-  
UNIVERSITÄT FREIBURG

---

# Algorithms for Radio Network

## Hybrid Protocol: ZRP

University of Freiburg  
Technical Faculty  
Computer Networks and Telematics  
Prof. Christian Schindelhauer

