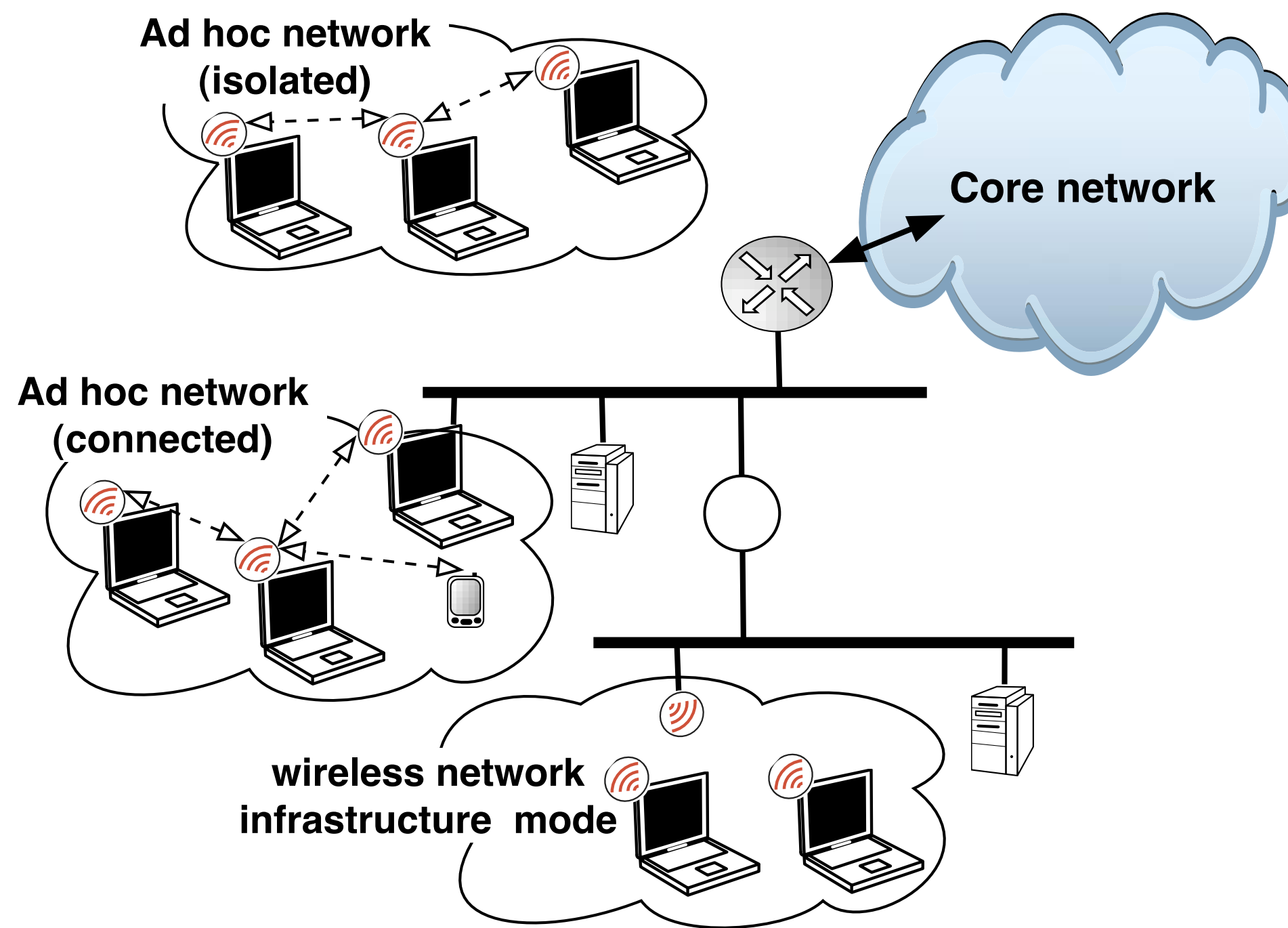


# Lilith: an Interconnection Architecture Based on Label Switching for Spontaneous Edge Networks

## Spontaneous network

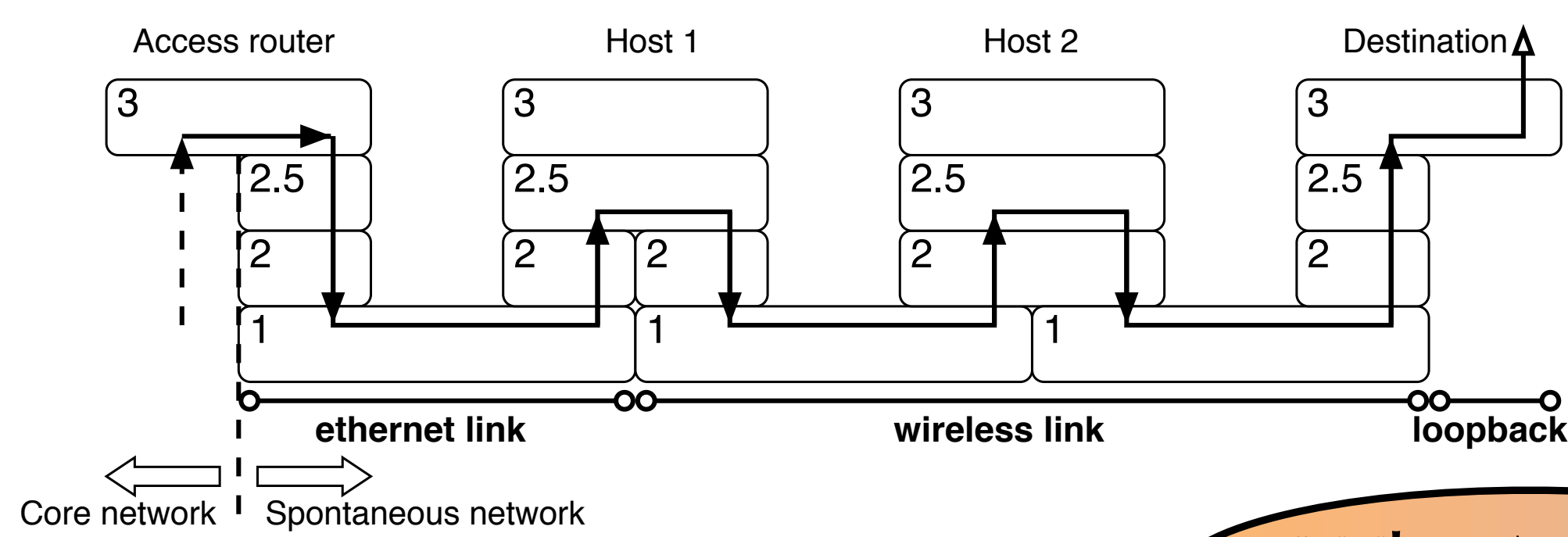
- Unmanaged
- Multi-hop
- Heterogeneous
- Sensors / actuators



Context

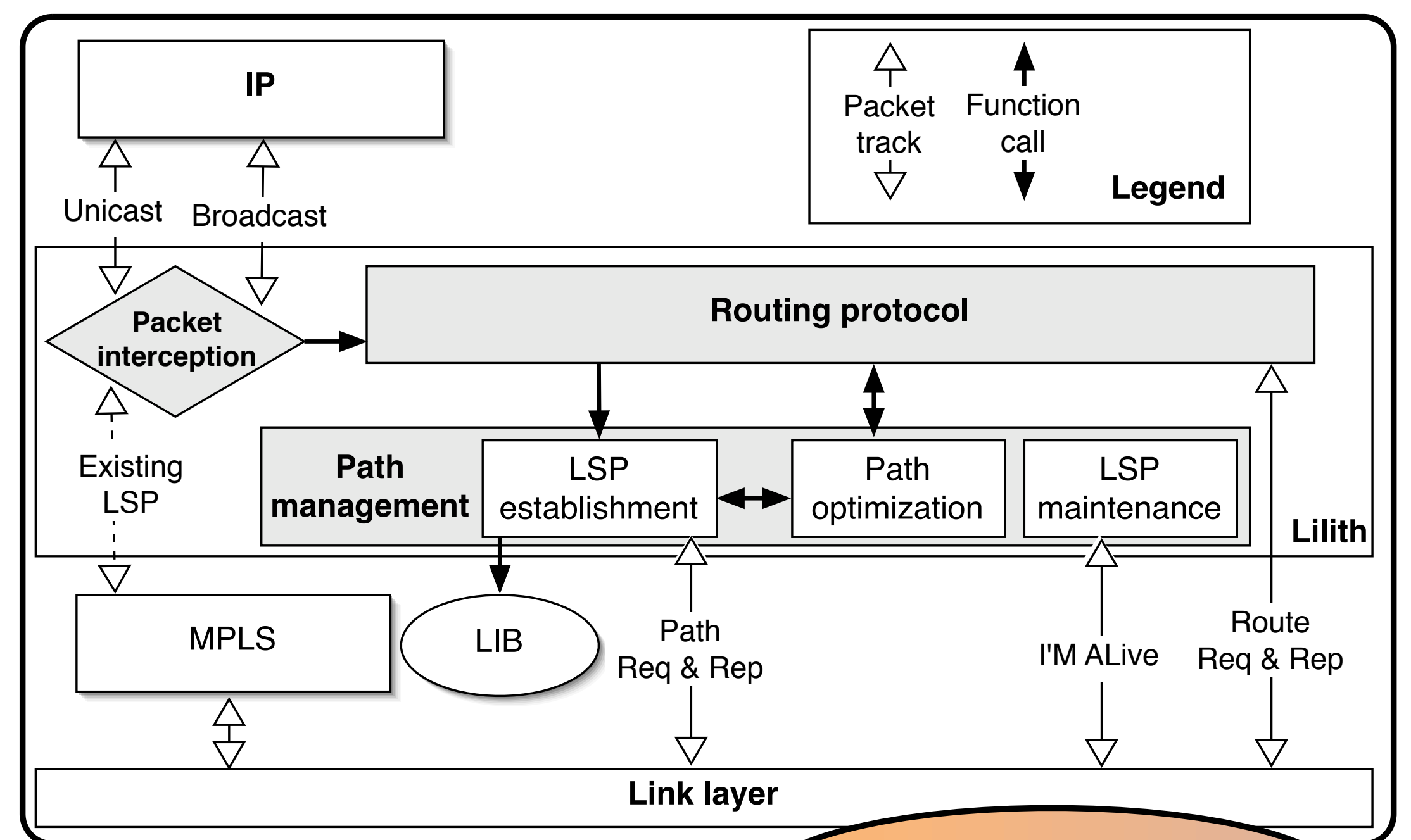
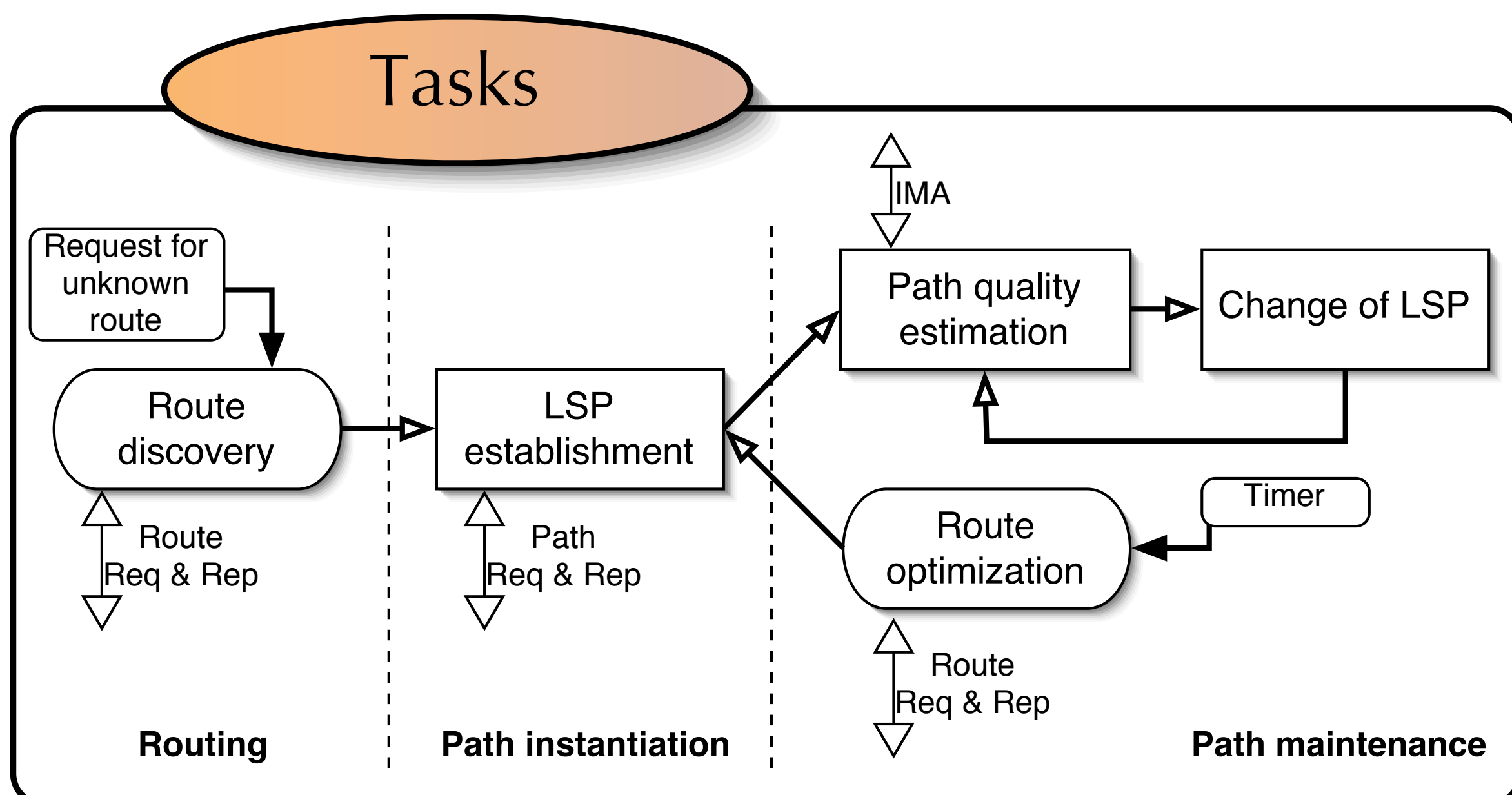
## Layer 2.5 switching

- single IP subnet
- MPLS interconnection
- on-demand LSP establishment based on an ad hoc routing protocol



Why MPLS?

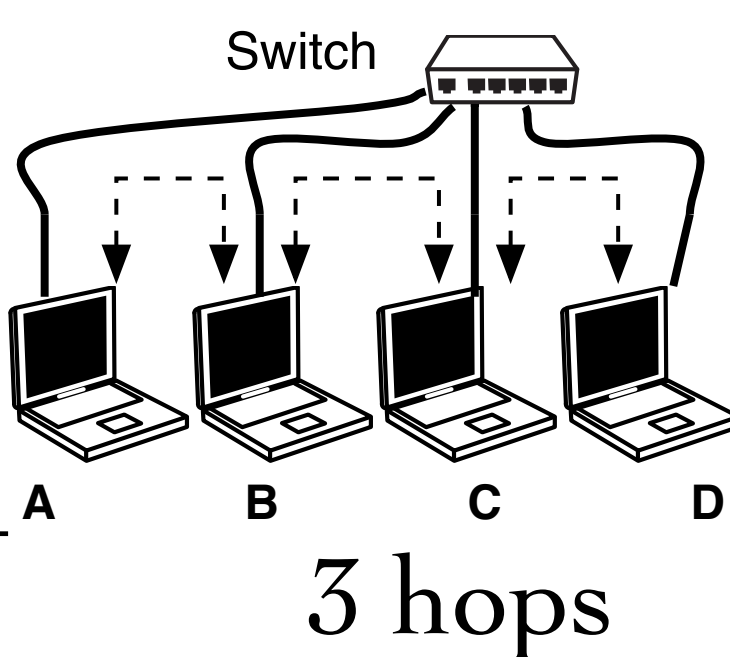
## Lilith architecture



Architecture

## Low overhead

	Host routes	Lilith
Route establishment	0.9 ms (ARP)	6 ms
Throughput Mb/s	91.4 100%	91.0 99.6%



## Testing

- development using UML (User Mode Linux)
- performance evaluation on wired network
- experiments with wireless laptops

## Highlights

### Broadcasts

- relaying is needed
- loop avoidance
- packets are encapsulated in Lilith packets and broadcasted similarly to the routing requests

### Backup routes

- IMA packets trigger the route failure detection
- fast rerouting to the backup path

