

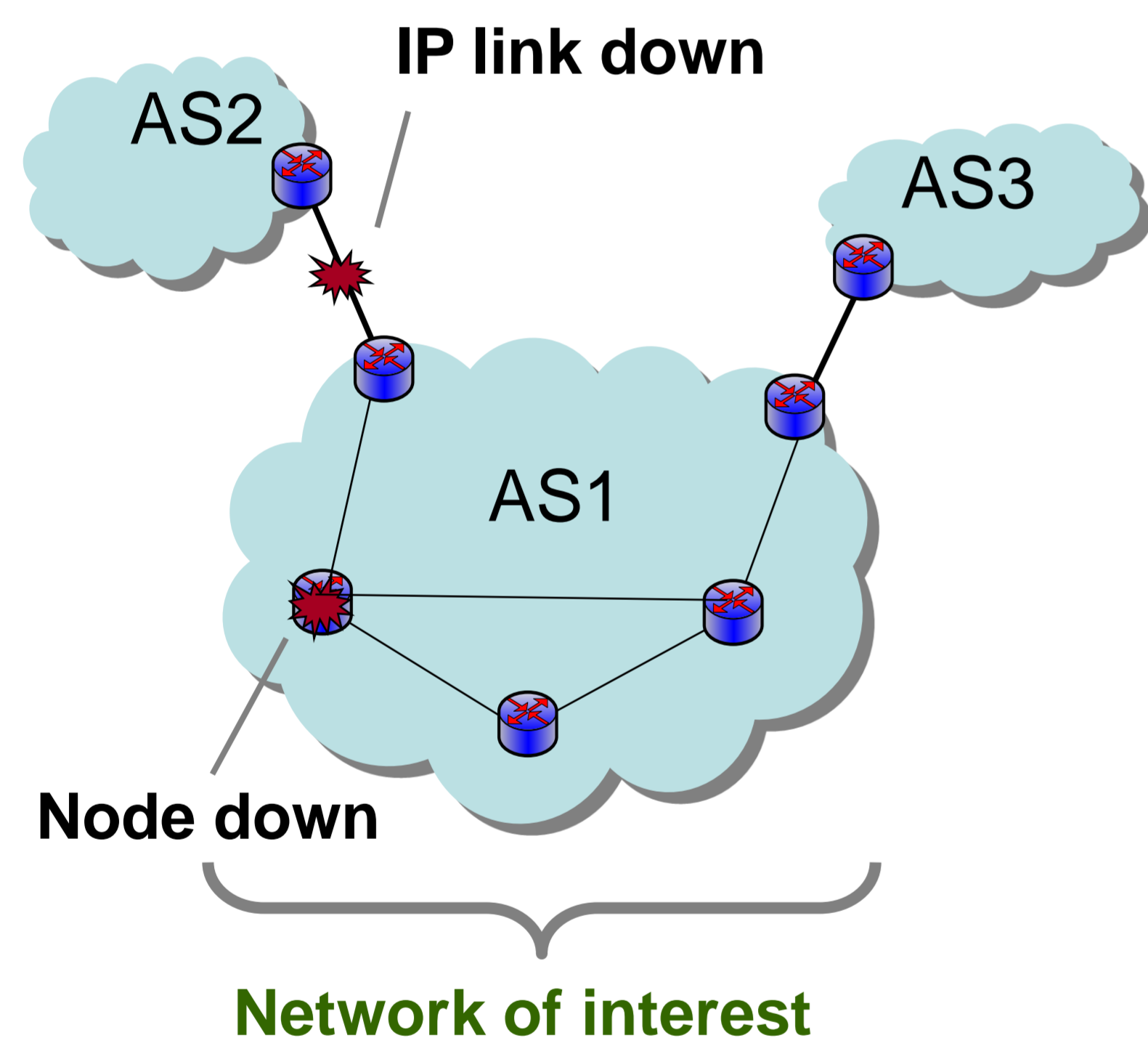
Characterization of network events and their impact on routing

Amelie Medem K., Renata Teixeira, Michael Meulle

IP APPLICATIONS NEED HIGH NETWORK AVAILABILITY

- Applications like VoIP and gaming cannot tolerate losses, high delay, or large delay variations

NETWORK EVENTS DISRUPT NETWORK AVAILABILITY



POSSIBLE CAUSES OF EVENTS

Unexpected

- Router crash/reboot
- Network card crash
- Fiber cut, Misconfiguration
- Power outage

Maintenance activities

- Router/Switch decommission
- IOS Up/Downgrade
- Interface card replacement

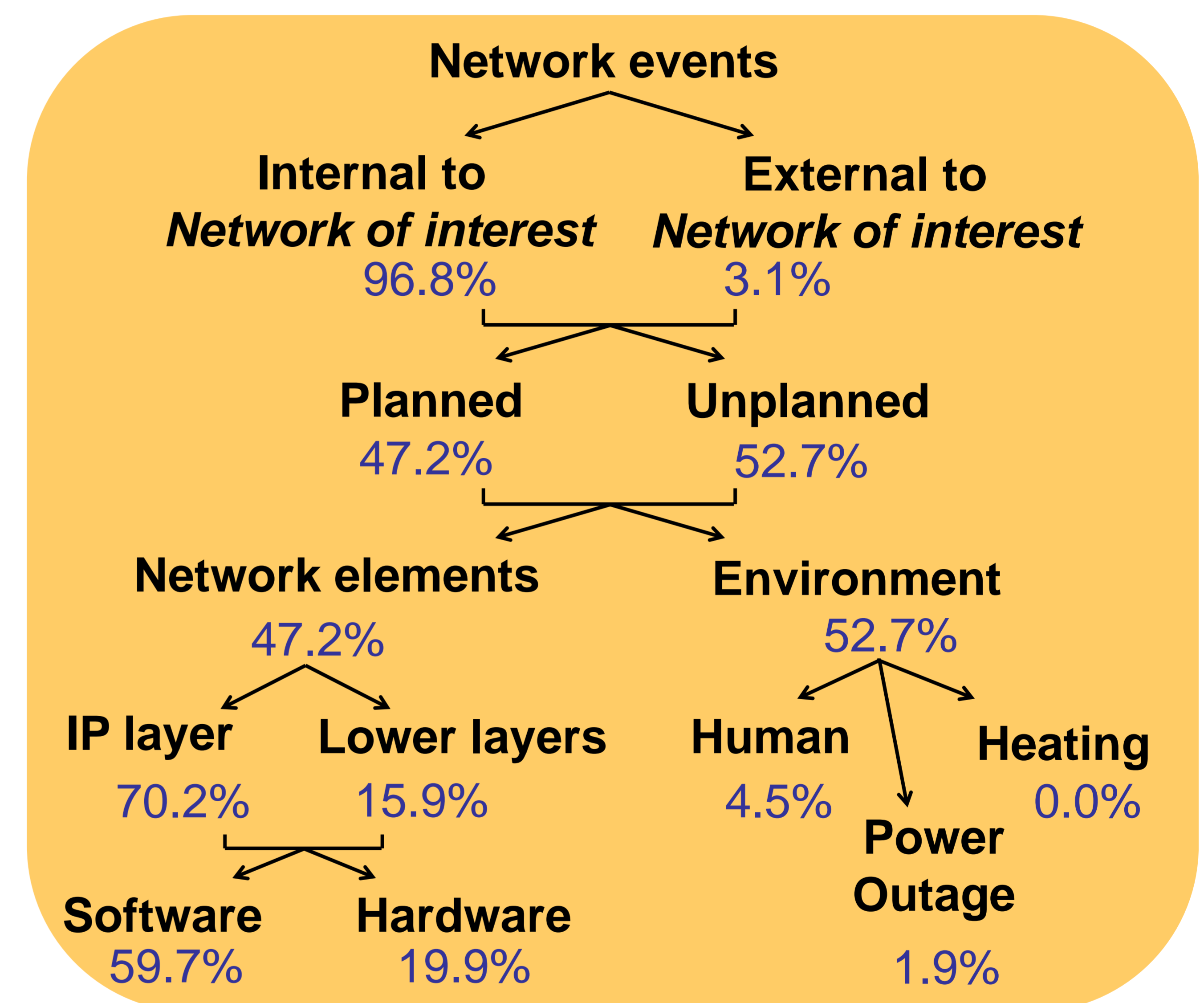
OUR GOAL:

UNDERSTAND NATURE OF NETWORK EVENTS

- Tools to troubleshoot network events
- Accurate failure models for simulation

WHICH EVENTS HAPPEN MORE OFTEN?

- Parsing of 3 years of trouble tickets of a VPN provider network



HOW NETWORK EVENTS IMPACT ROUTING?

- Correlation between 8 months of IS-IS messages and trouble-ticket events
- Findings
 - 46.6% of network events do not impact IS-IS routing
 - Only 12.1% concern routers without IS-IS configuration