

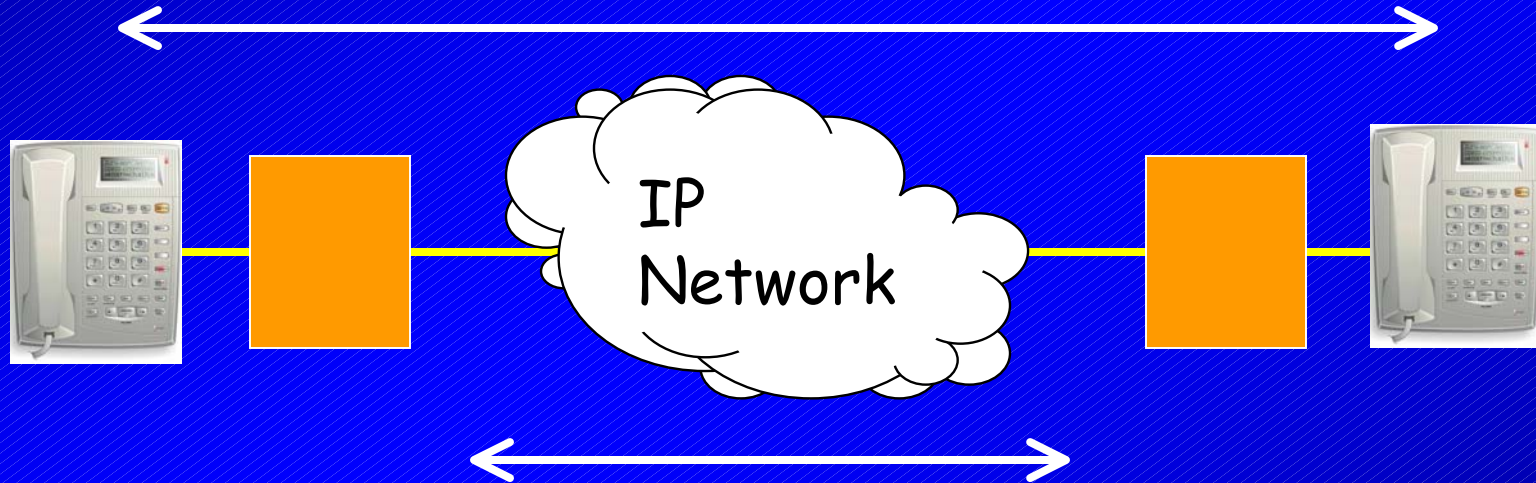
Utilizing QoS

Telchemy Incorporated

Web: www.telchemy.com

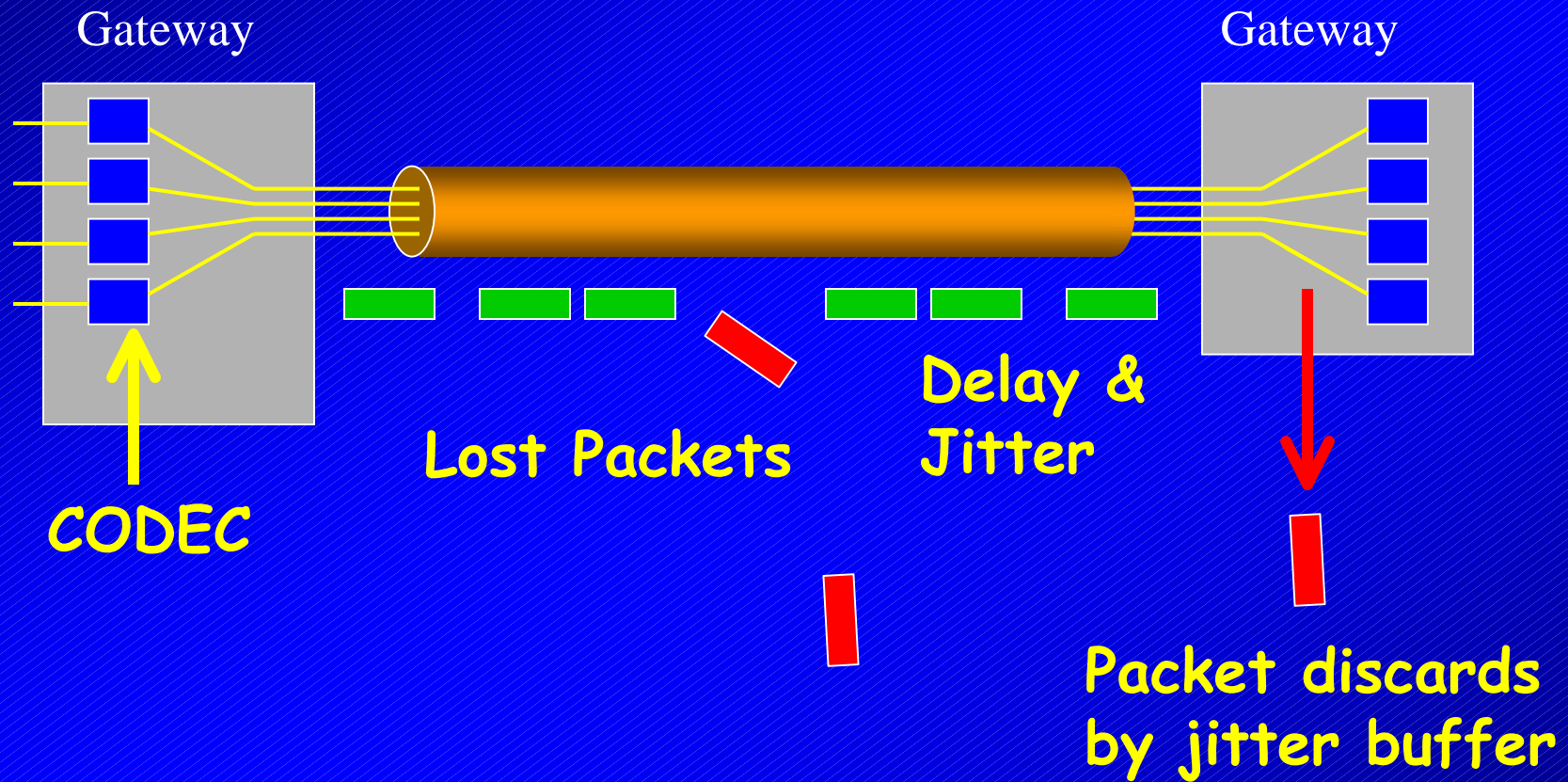
What is QoS?

User Perceived - Quality of Experience

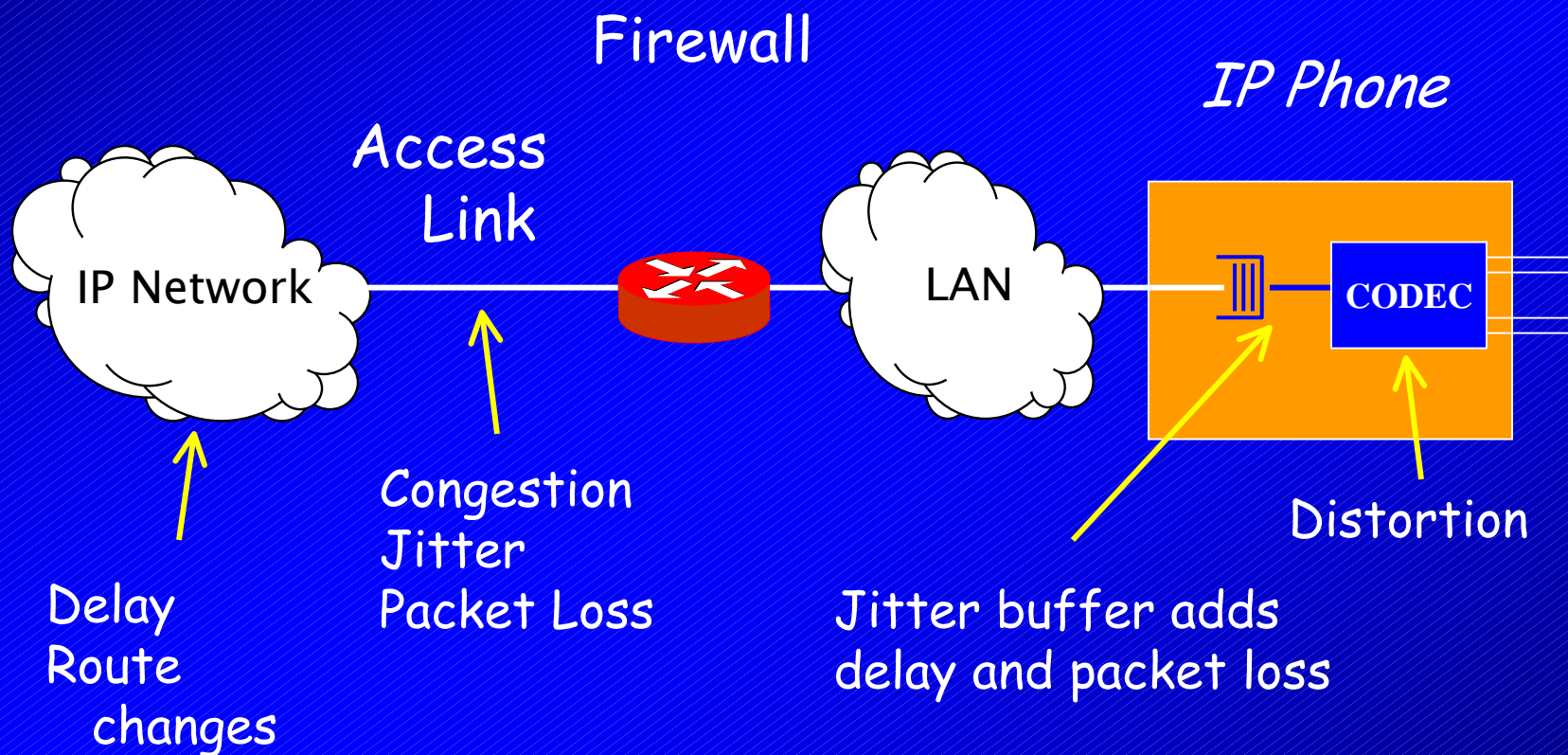


Network - Quality of Service

Factors impacting quality



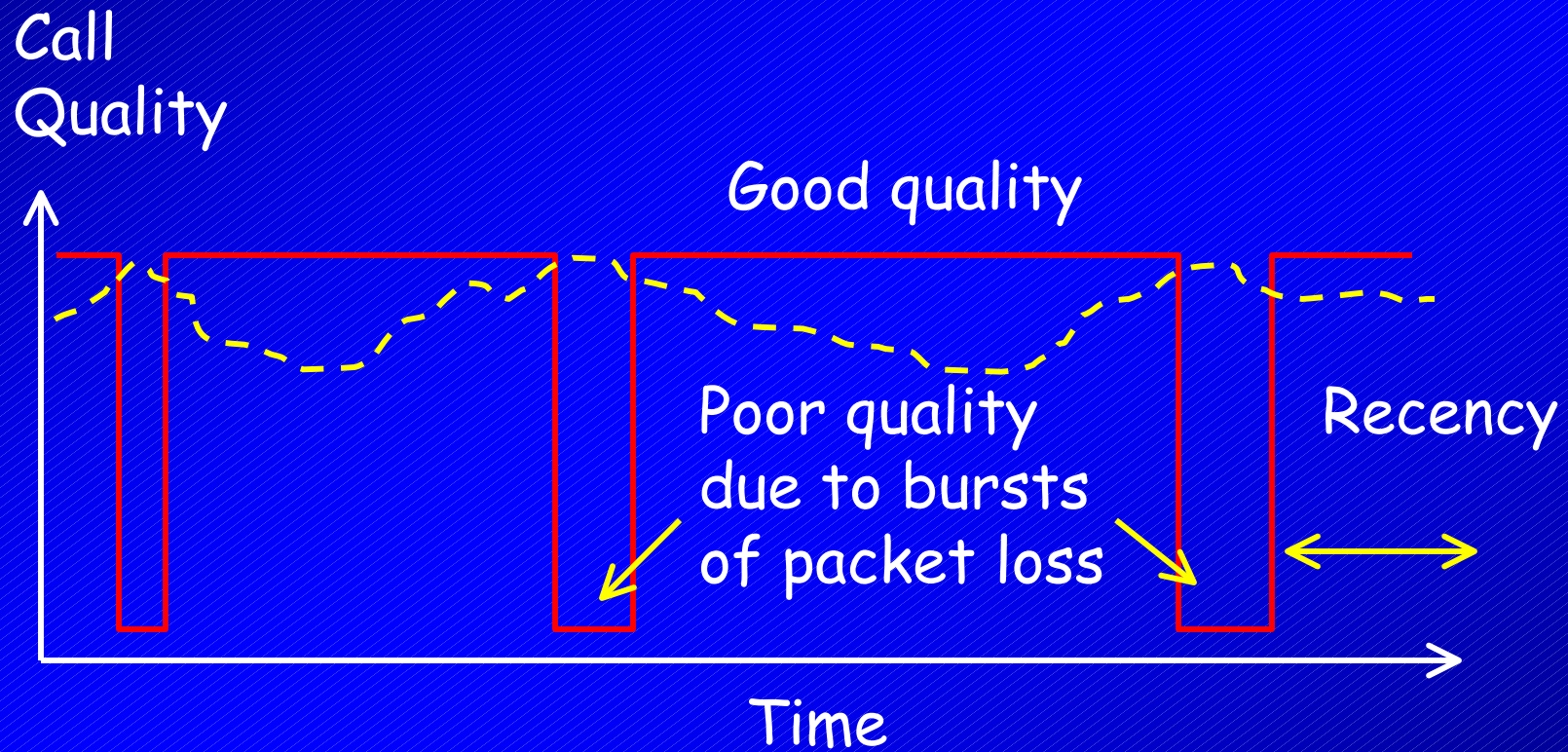
Sources of impairments



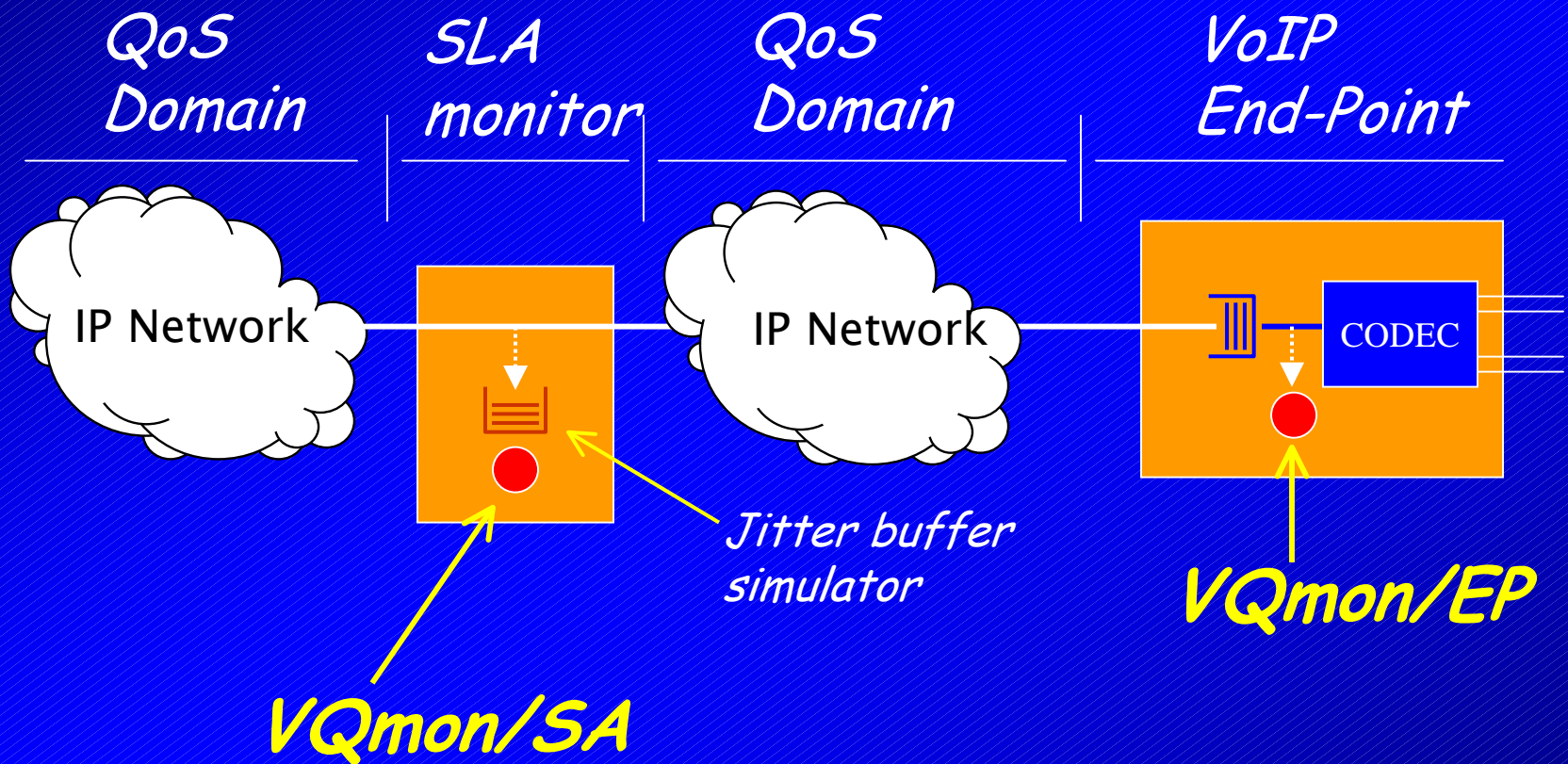
Sources of Impairments

- Access Links are a bottleneck
 - Congestion leads to jitter, delay variations, packet loss
 - Little control over LAN traffic
 - Little control over traffic coming from the IP network
- Core IP networks suffer from route changes/ flapping, stray packets
- Leads to BURSTY PACKET LOSS

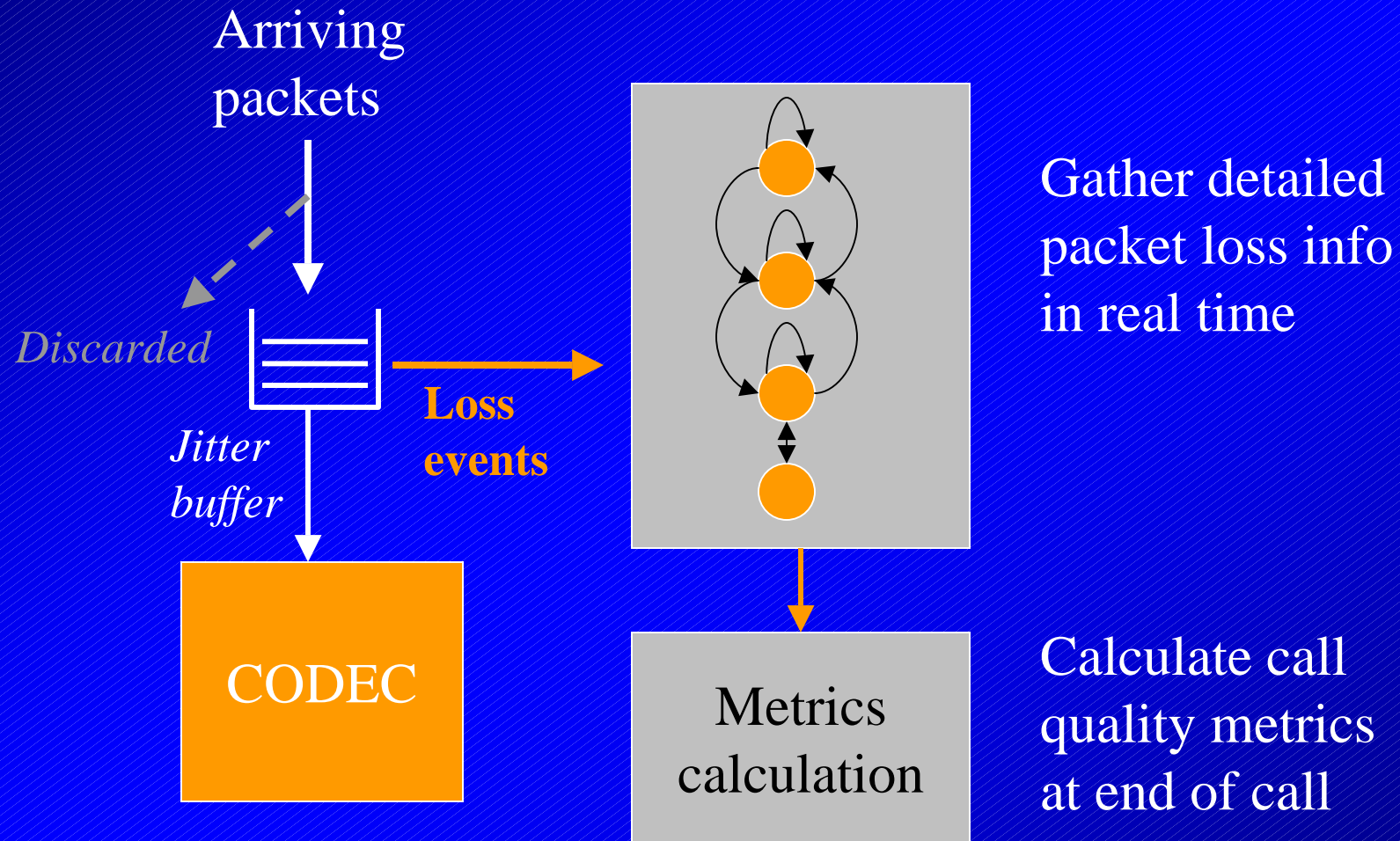
Resulting Call Quality



Call quality monitoring



How VQmon works



Lightweight Operation

Stream monitor

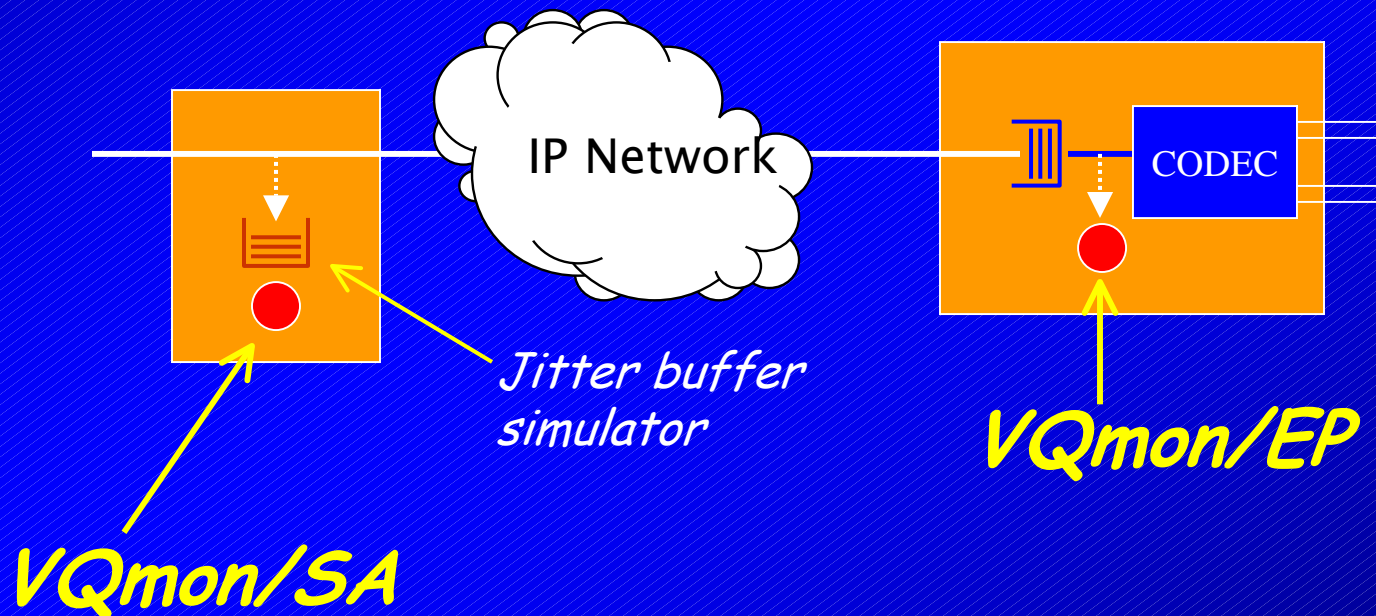
0.0075 MIPS

(50,000 instances on PII/400)

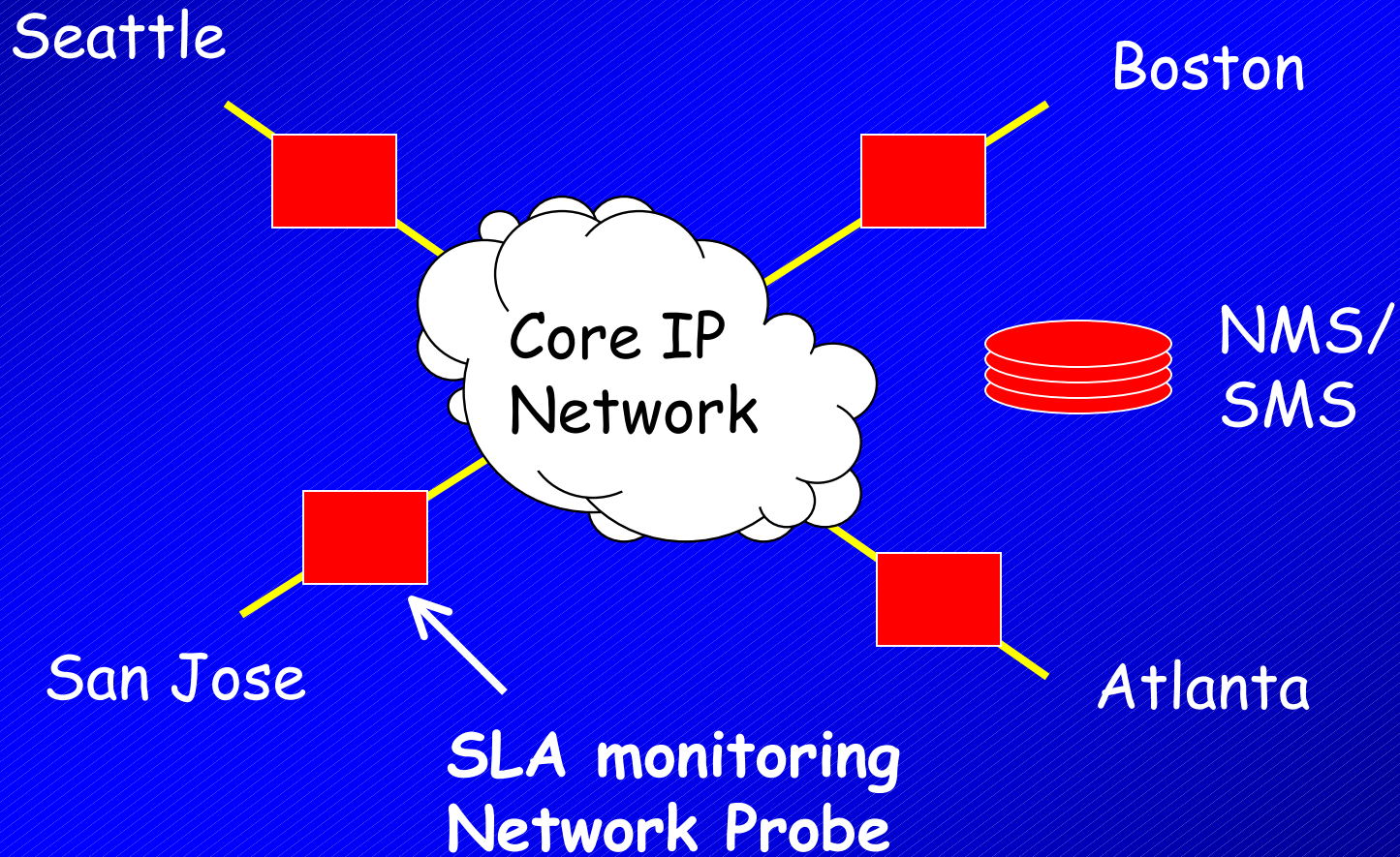
Port monitor

0.000075 MIPS

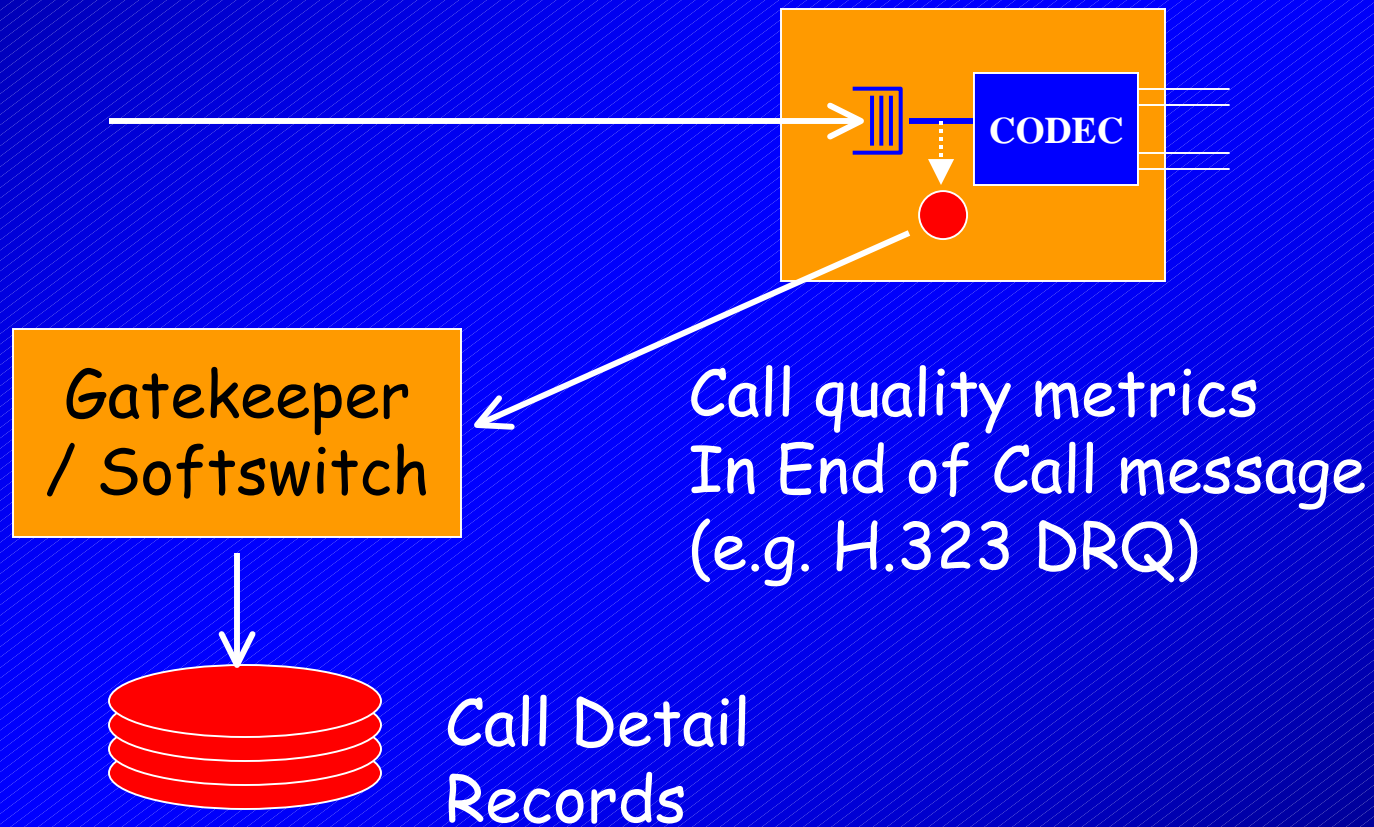
(5M instances on PII/400)



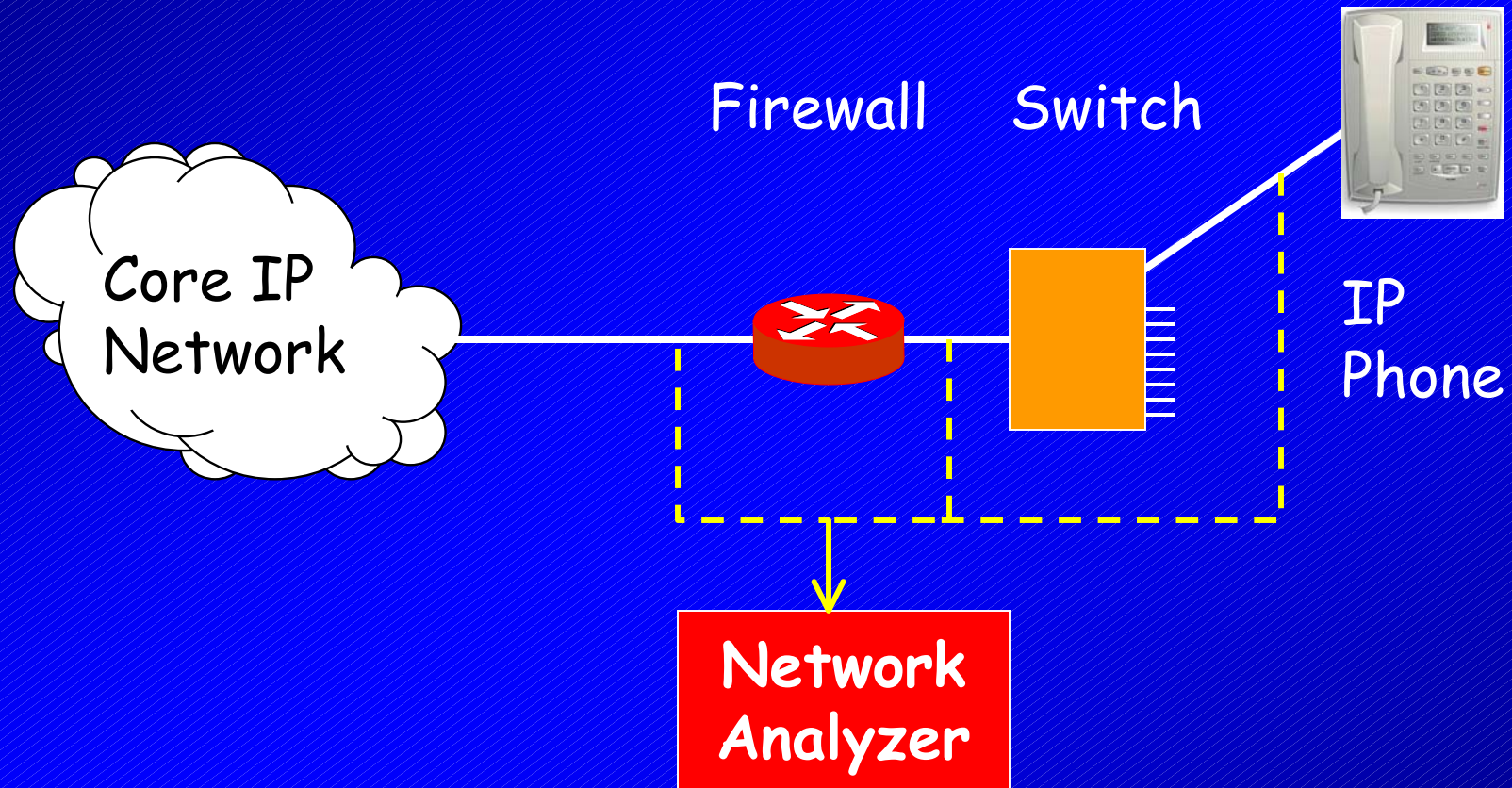
Service Monitoring - SLA



Service Monitoring - CDR

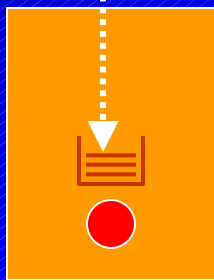


Troubleshooting



Troubleshooting

Extended RTCP

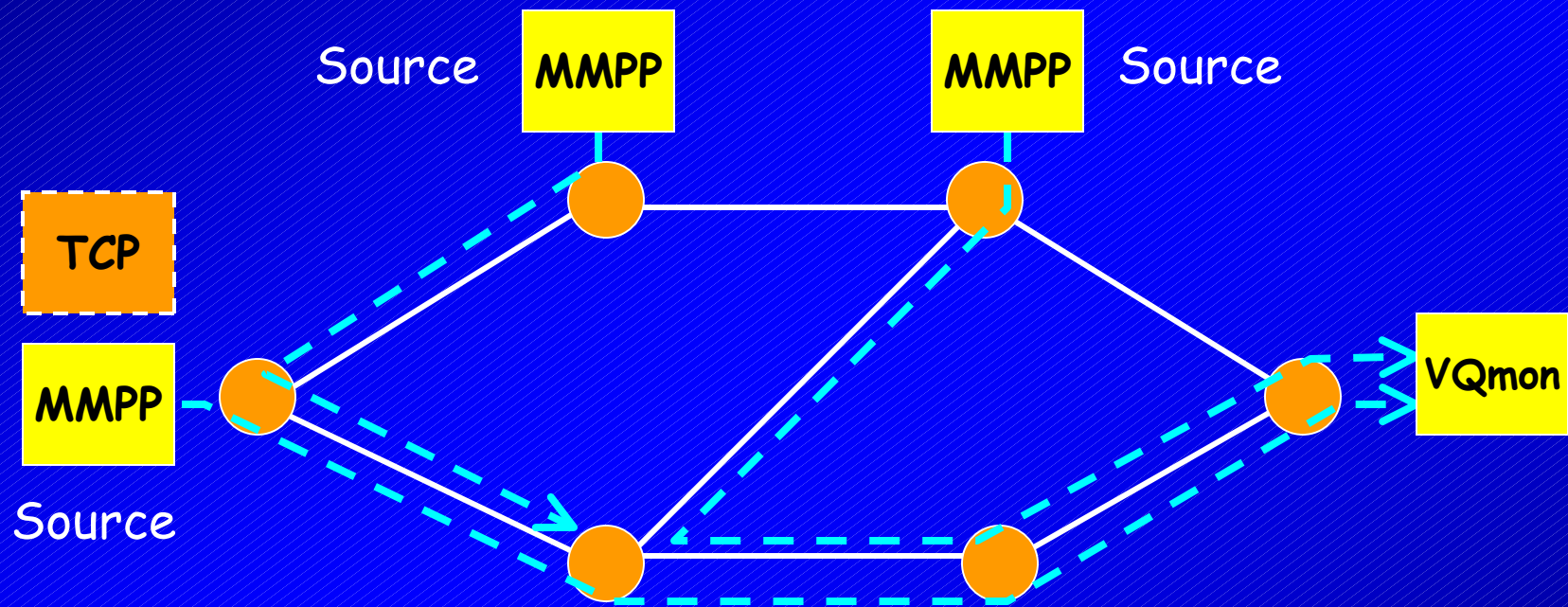


Network
Analyzer

Extended RTCP reports can include
Call quality metrics, counts of packets
Lost and discarded...

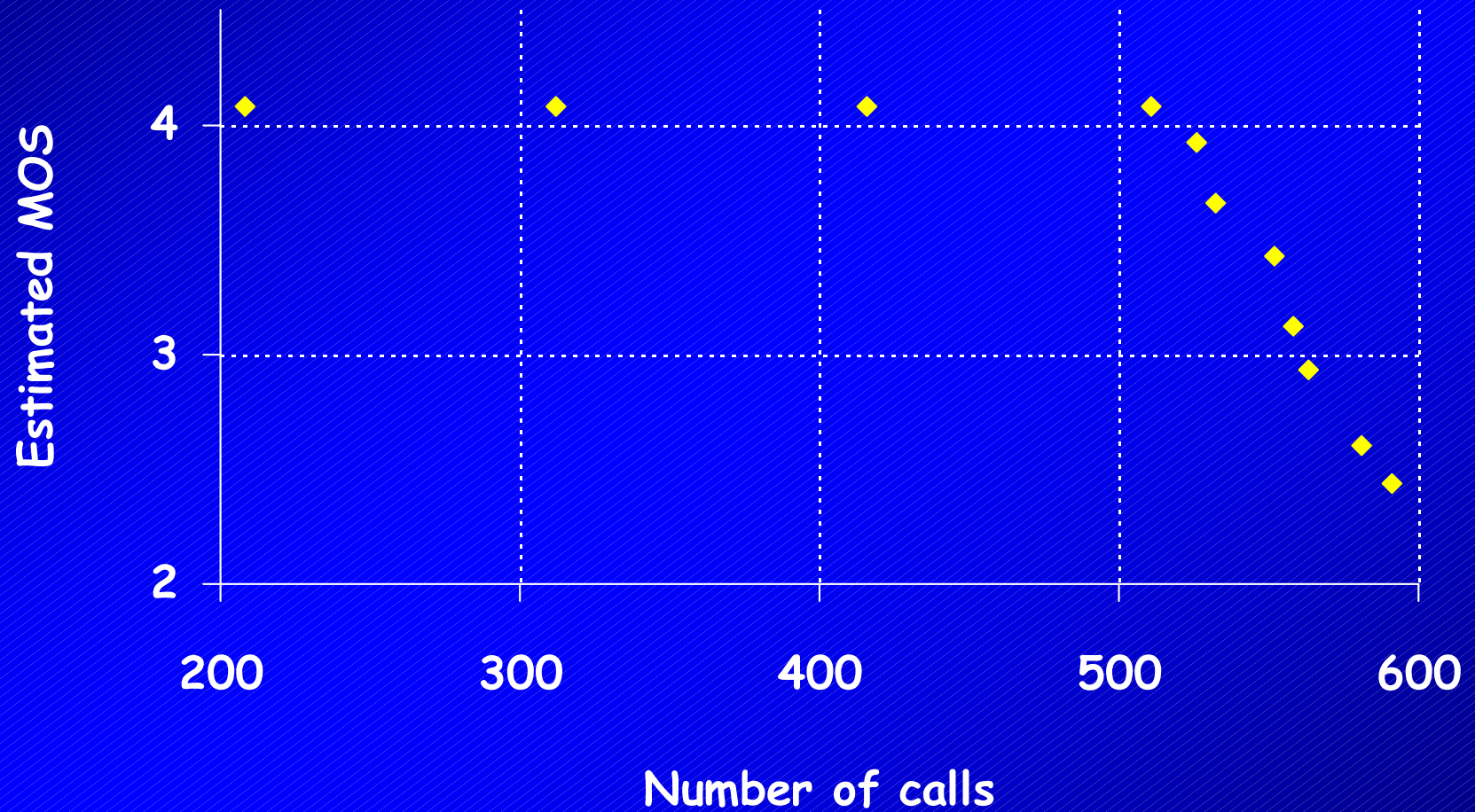
Consistent measurements can be made
At mid-points helping with fault isolation

Service Modeling



IP network simulator (NS-2)

Service Modeling



Spring VON 2002

Telchemy

Versatile QoS Technology

- Lightweight accurate non-intrusive monitoring....
- Service quality monitoring
- Troubleshooting
- Active QoS Control
- Service modeling

About Telchemy

- **Focus** - *deliver end-user perceived QoS with minimum use of network resources*
- **Approach** - *open architecture, software based, integrate with any VoIP systems*
- **First products** - *lightweight call quality monitoring software for integration into VoIP Gateways, and SLA monitors.*
 - *Beta - February*
 - *Released - May*
 - *First 3 customers - July*