

Telchemy



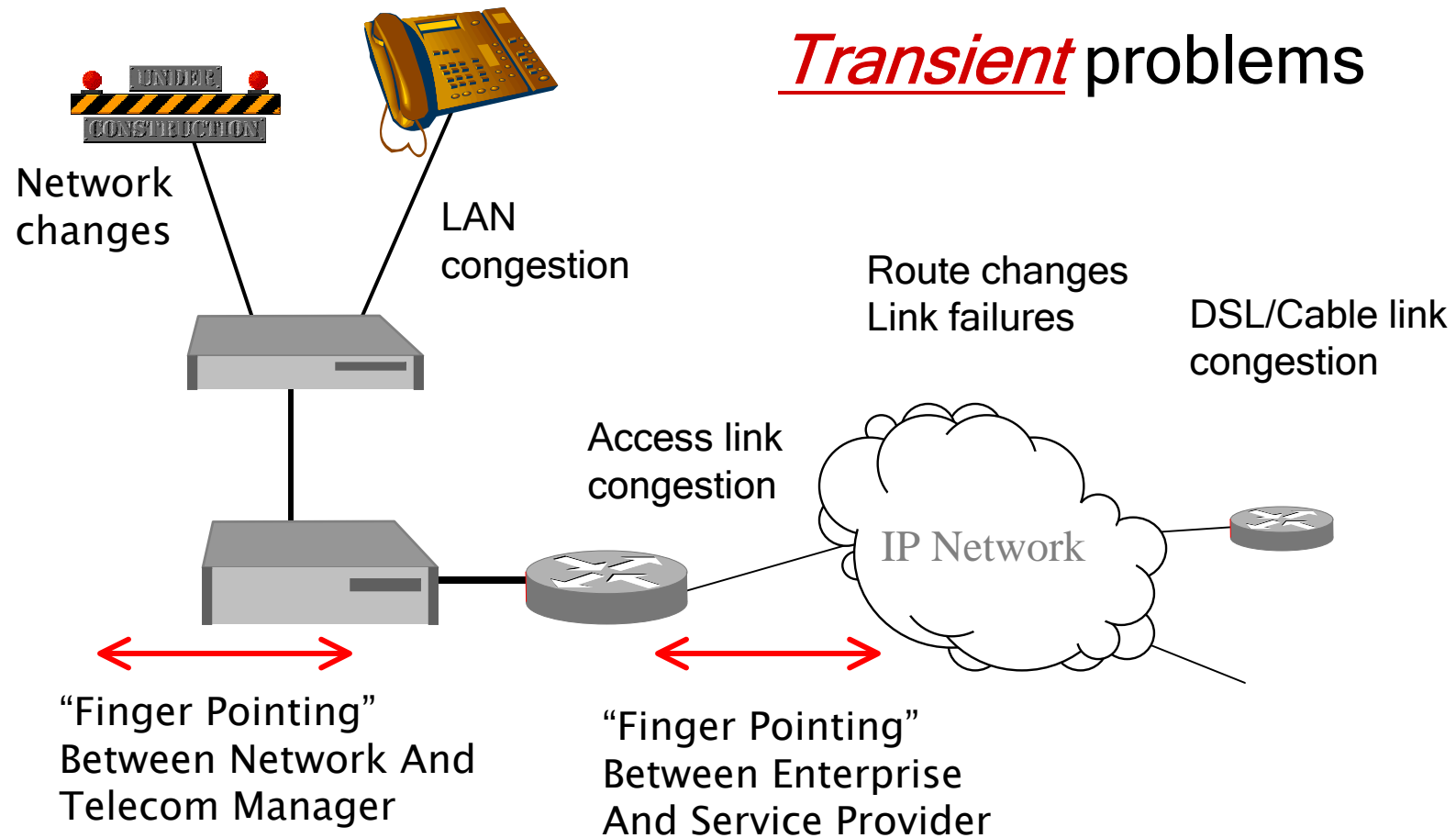
Actively Managing Multimedia

Enterprise Voice over IP Management

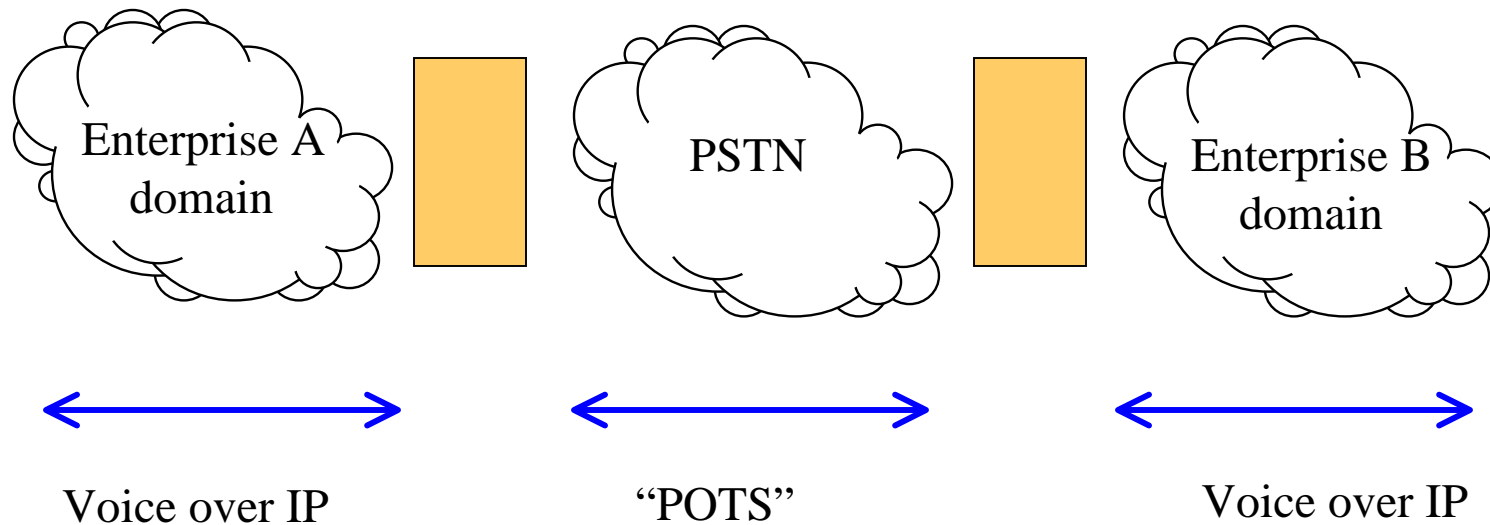
Alan Clark

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The problem space

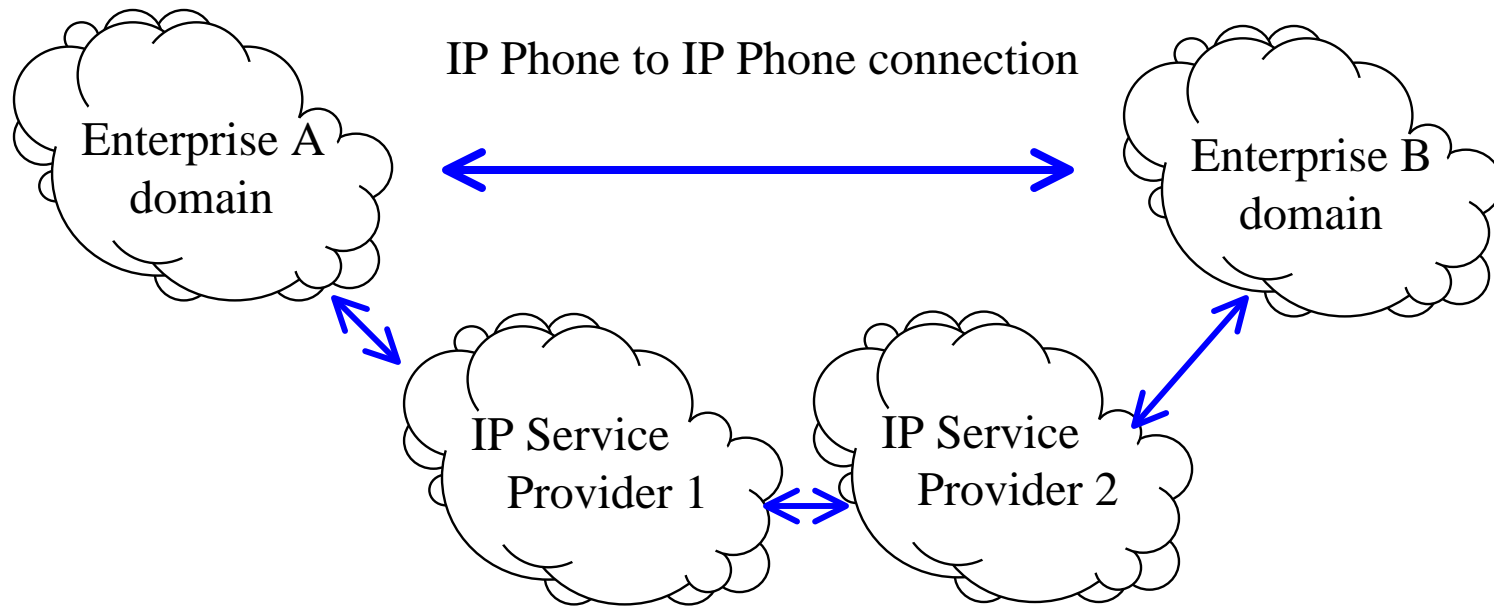


Inter-Enterprise calls?



Works, but limits choice of CODECS, increased delay due to multiple jitter buffers and packetization

End to end VoIP?

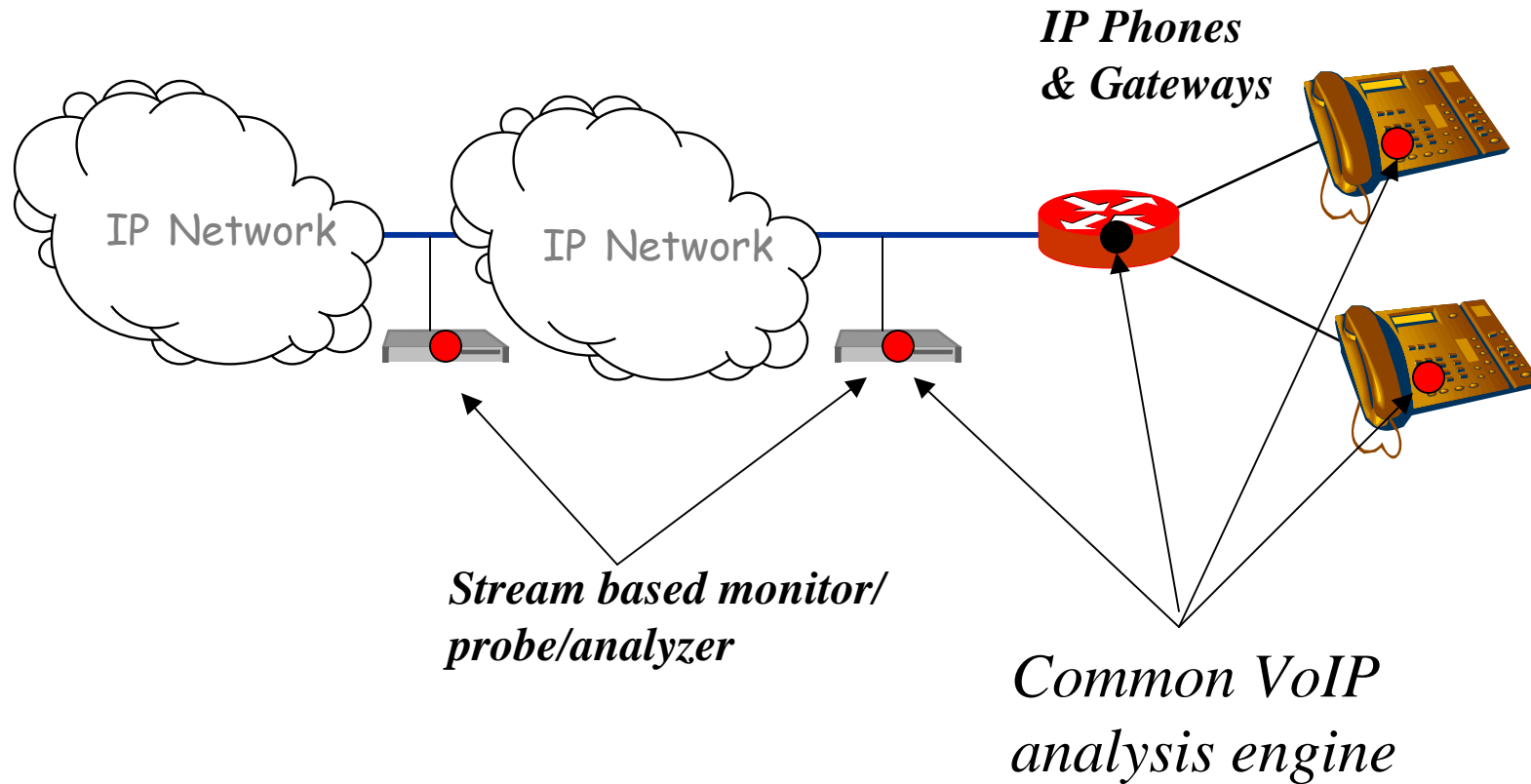


Multi-vendor environment, “management firewalls”,
no end-to-end problem resolution tools

The problem space

- How to manage a Voice over IP service or network and ensure consistent quality?
- How to quickly locate, diagnose and resolve problems?
- How to manage/ troubleshoot VoIP services transported over different management domains?
- IP problems tend to be transient in nature – how to recognize and diagnose?
- How to provide network-wide performance monitoring at minimum cost?
- How to do the above in a multi-vendor network?

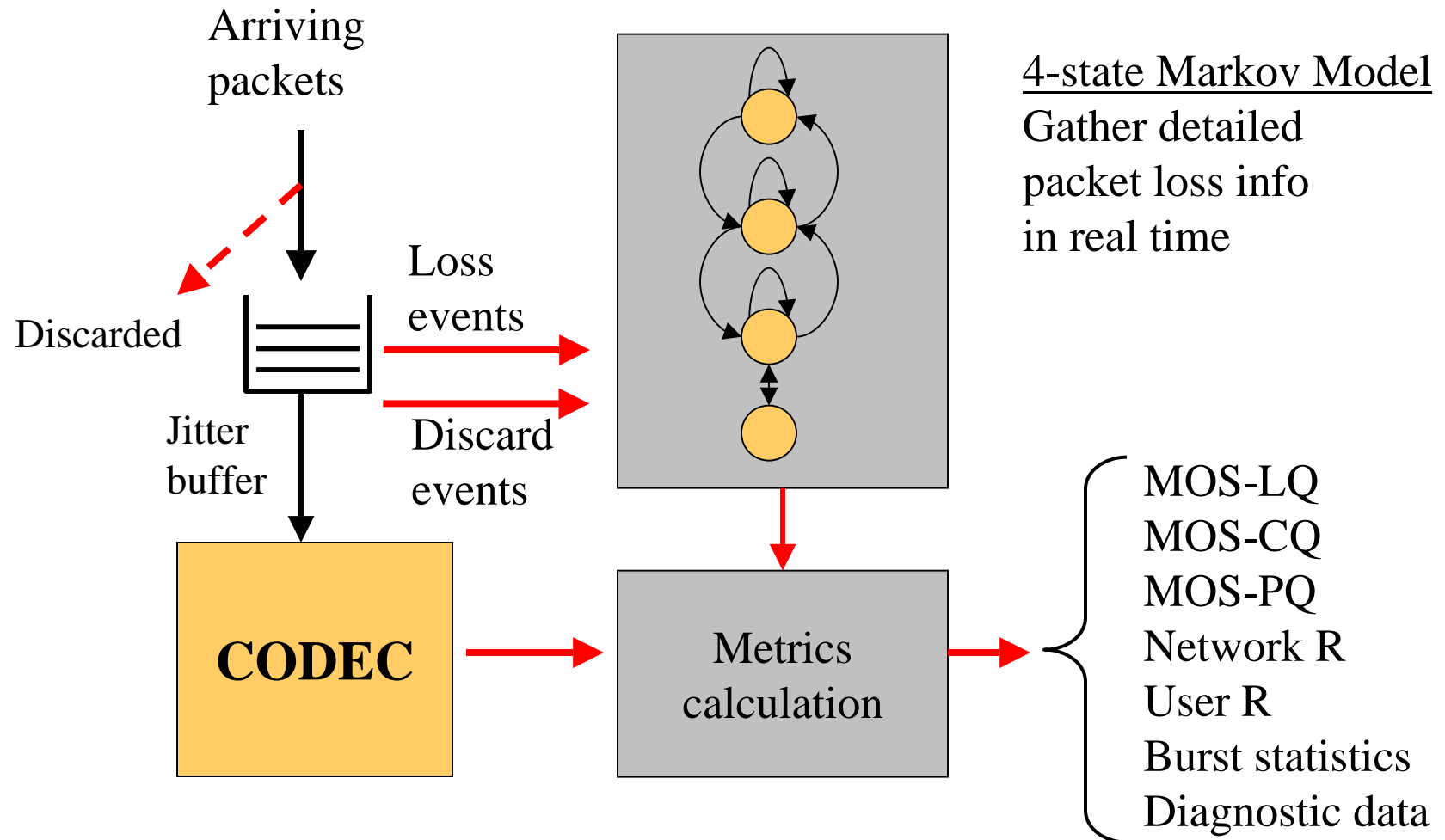
Solution – consistent methodology



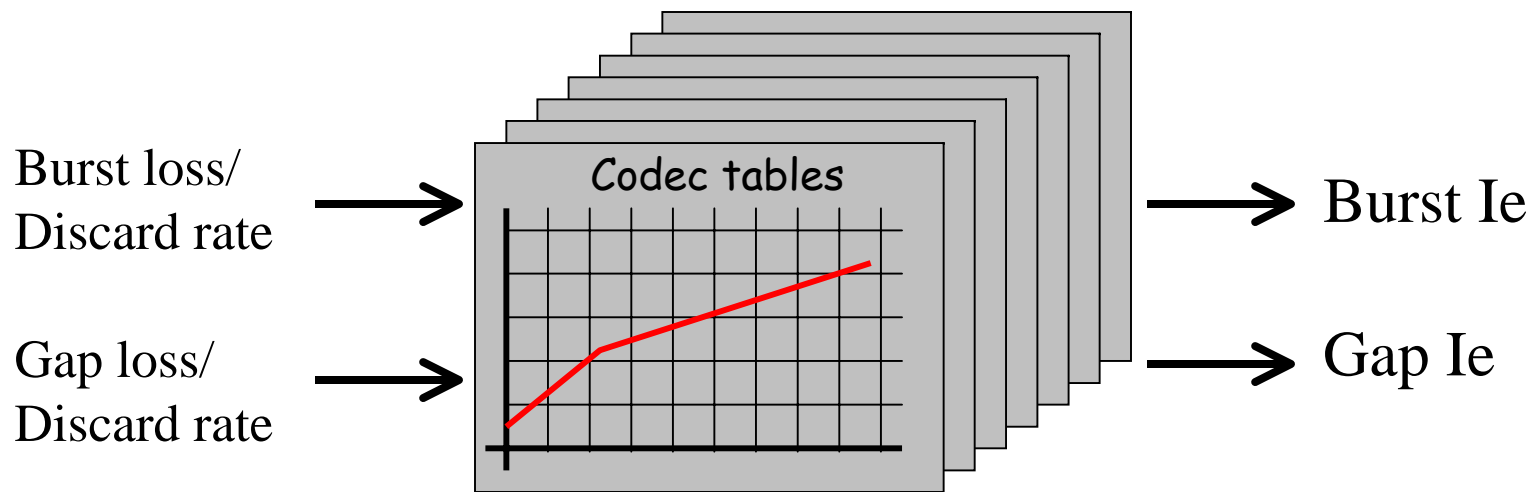
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... and a suitable algorithm



Calculating the effects of loss/discard

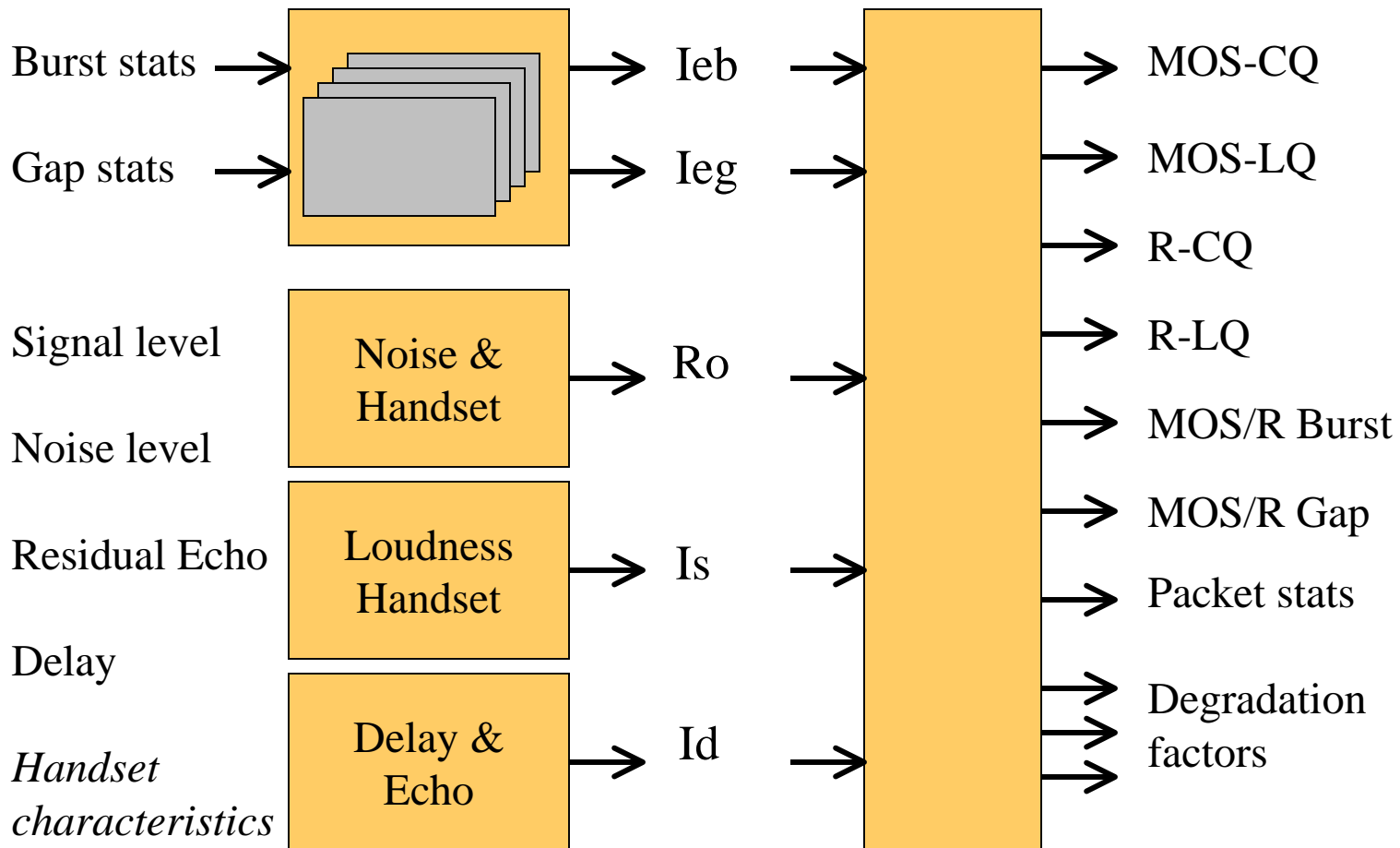


Mapping between packet loss rate and Ie

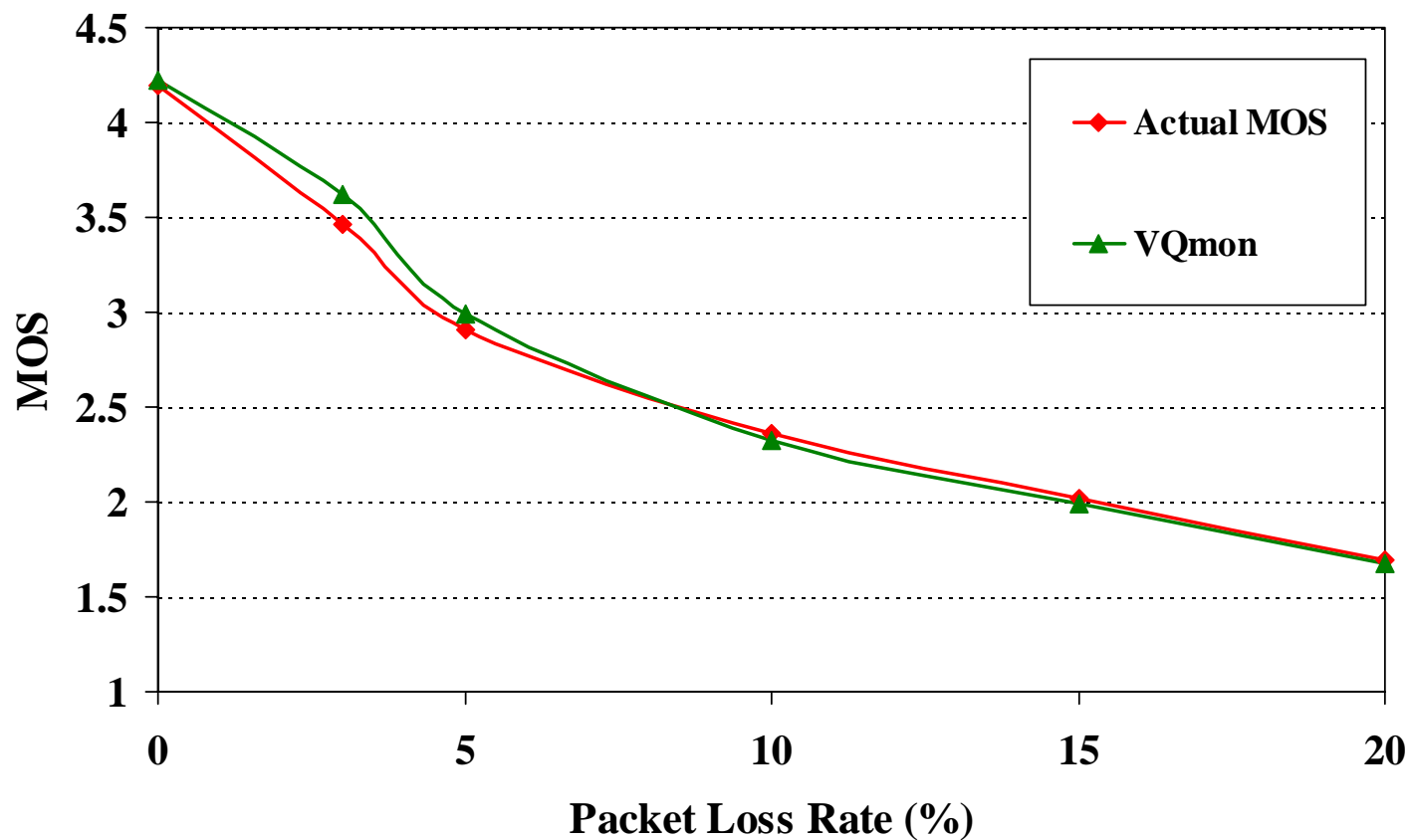
Wide range of CODECs supported:

*G.711, G.722.1, G.723.1x, G.726x, G.728, G.729x,
GSM-HR/FR/EFR & various proprietary CODECs*

Calculating metrics



How accurate?



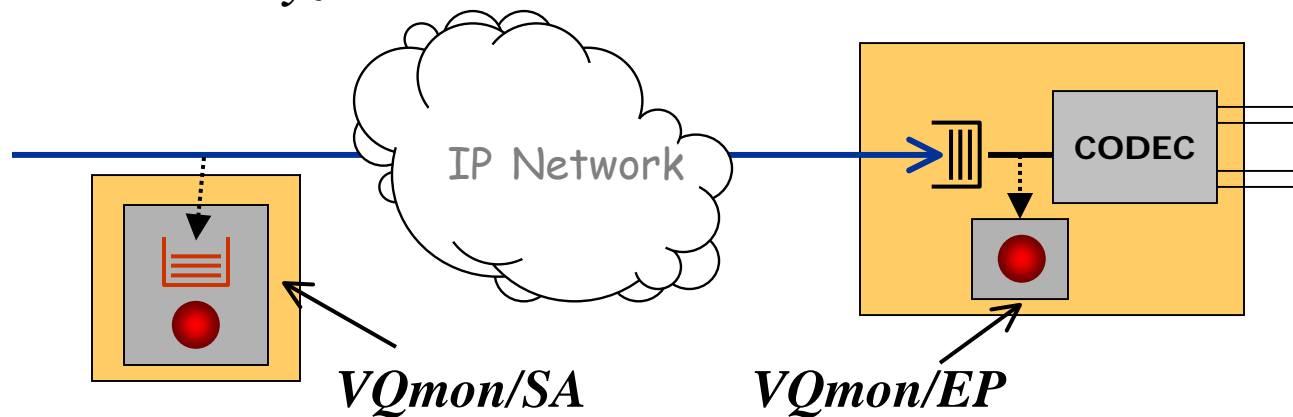
Subjective data from COMSAT

G.711 PLC

Stream vs Endpoint monitoring

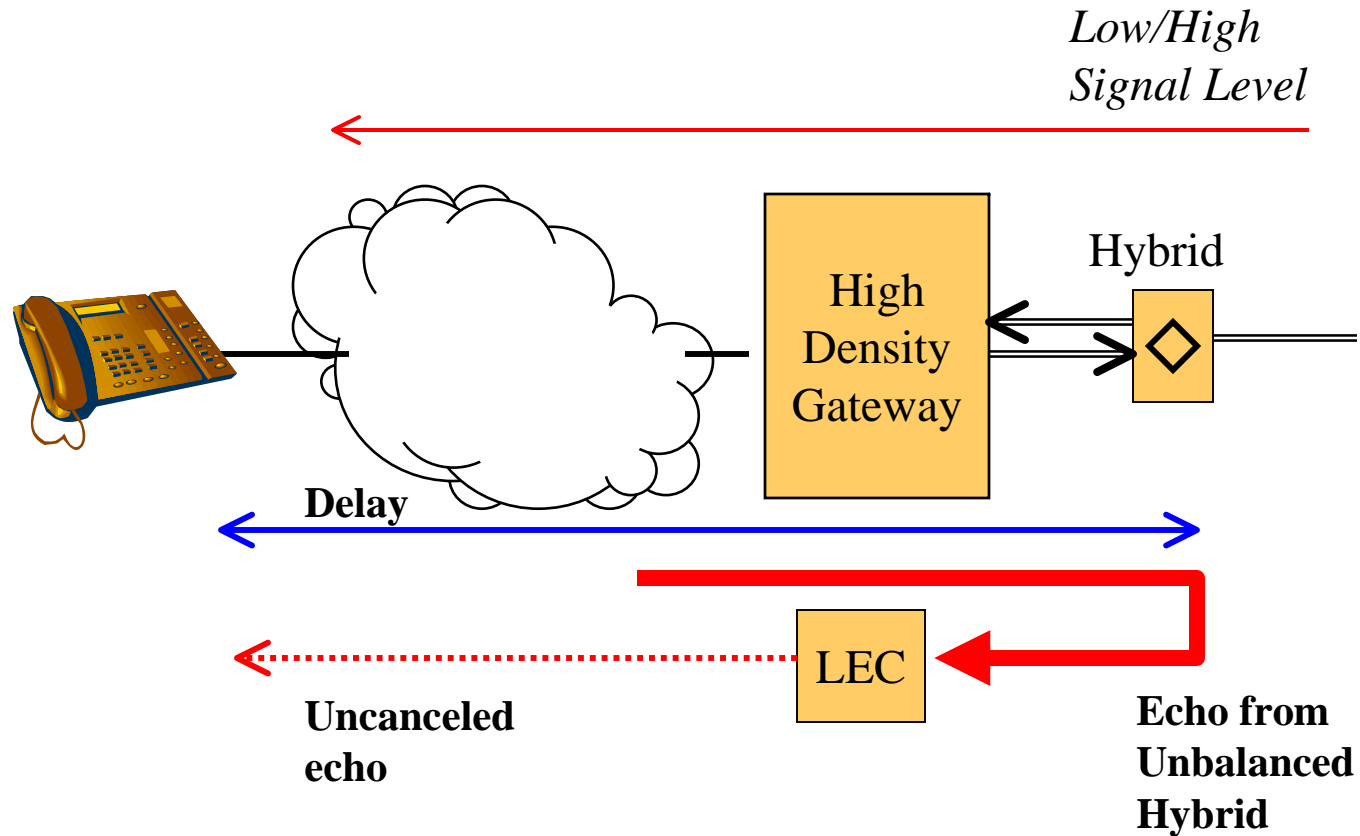
*SLA Monitor
Protocol Analyzer*

IP Phone

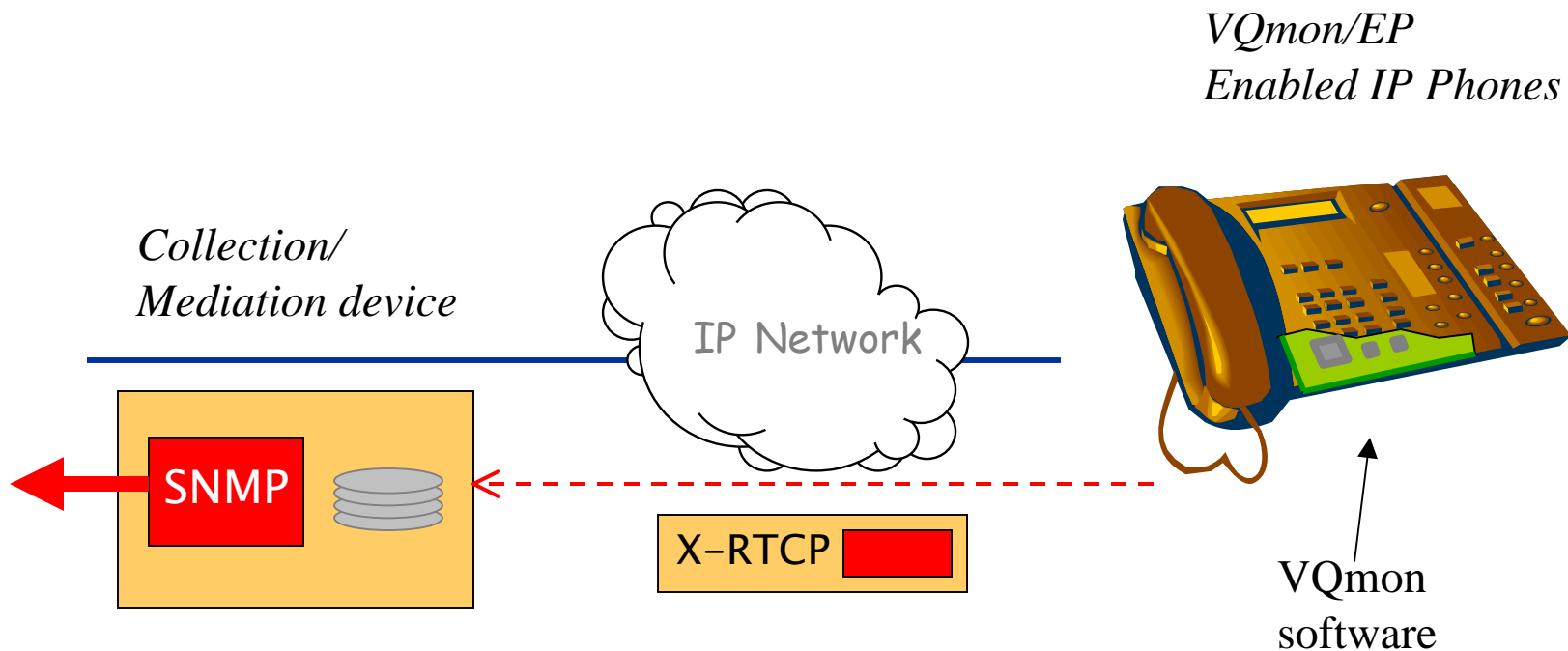


VQmon provides *real time monitoring* of large numbers of VoIP calls, measures *time varying* and *transient* impairments and provides a *perceptual quality score*.

Incorporating analog impairments



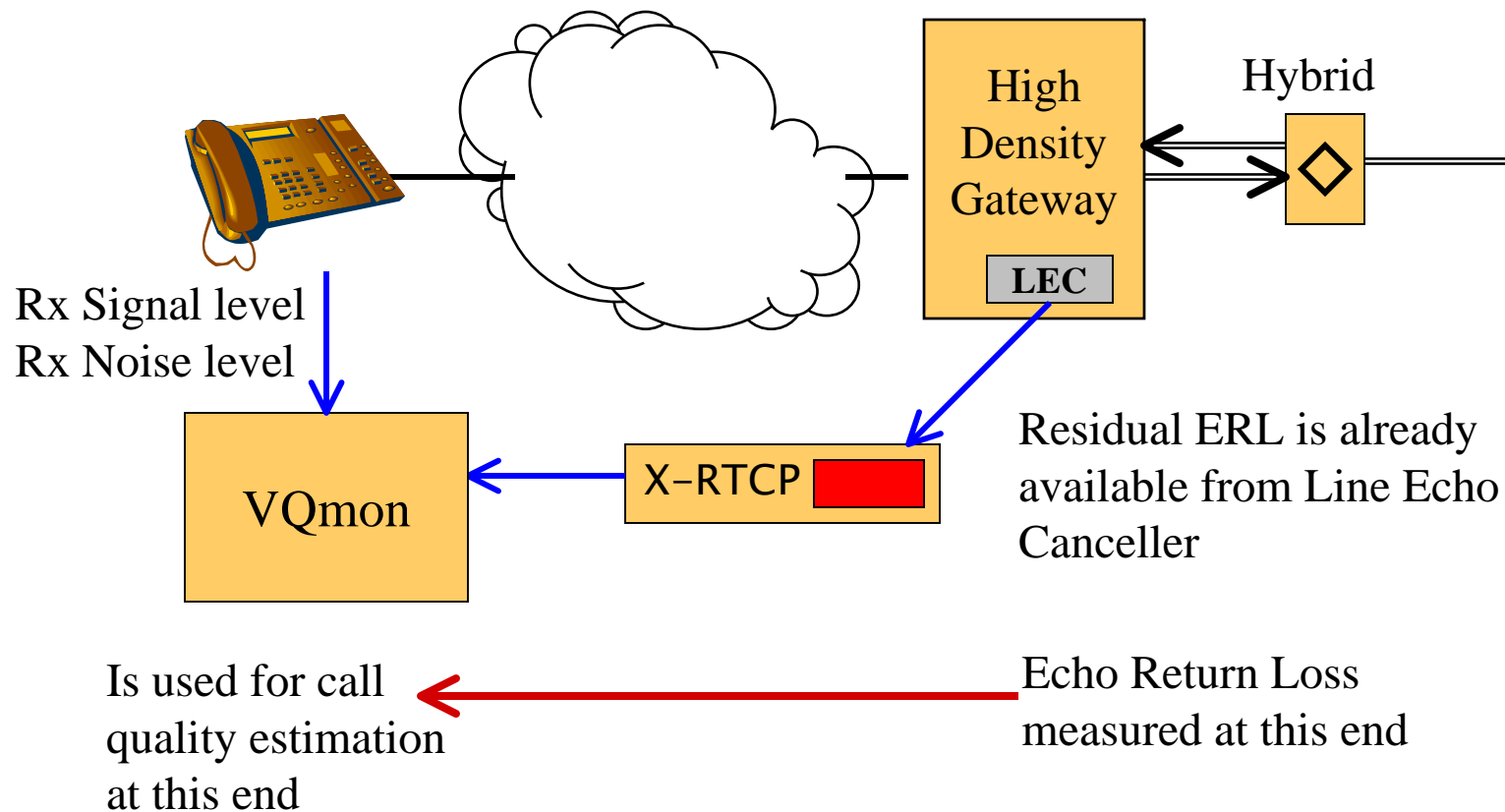
Extended RTCP



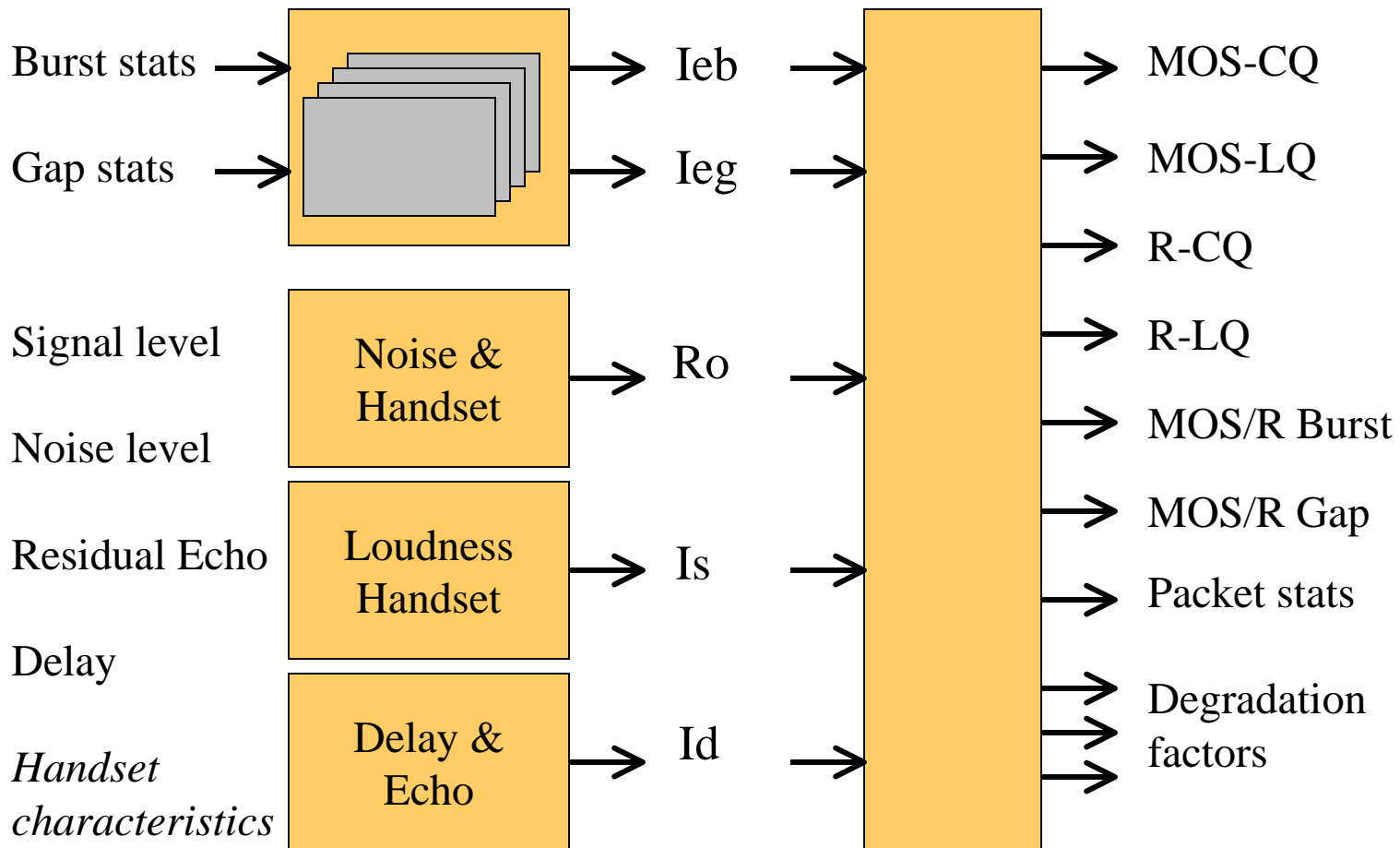
The new RTCP Reporting Extensions draft provides an ideal way to get metrics from an IP phone, through a Firewall and to a management system

Incorporating analog impairments

RTCP Reporting Extensions also gets useful data from one end to the other



Calculating metrics

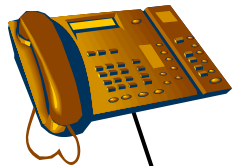


How does this help solve the problem?

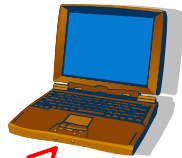
- Same algorithm is used in SLA Monitors, Analyzers, IP Gateways, IP Phones....
- “Multi-vendor” algorithm, already widely used
- Detects and incorporates the effects of transient network impairments
- Provides detailed diagnostics to help resolve the problem quickly
- Inexpensive to deploy - attractive to network managers

Enterprise Management

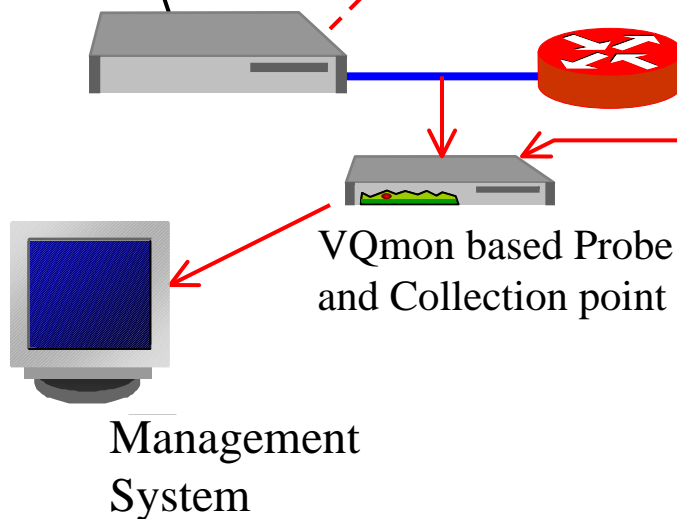
VQmon enabled
IP Phone



VQmon
enabled
Analyzer



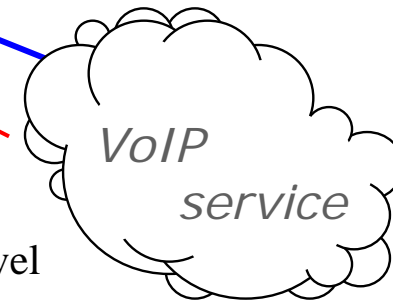
Provides *consistent real time information*
from end-systems, key paths and streams,
and Service Providers



VQmon enabled
end systems



VQmon
measured
Service Level
Agreements



Telchemy

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About Telchemy

- Provides software technology for non-intrusive and active Voice over IP service quality monitoring and problem diagnosis.
- Pioneered an embedded software approach - provides a lowest cost - network wide real-time monitoring
- VQmon technology licensed by Artiza, Brix Networks, Brooktrout, Finisar, Nortel Networks, Visual Networks
- Key partnerships with leading DSP software vendors to incorporate key software components directly into Vocoder - makes integration easy
- VQmon has been deployed in the field for over 12 months and is used by many service providers and key Enterprise networks