Telchemy

Actively Managing Multimedia

Is my IP network Video-ready?

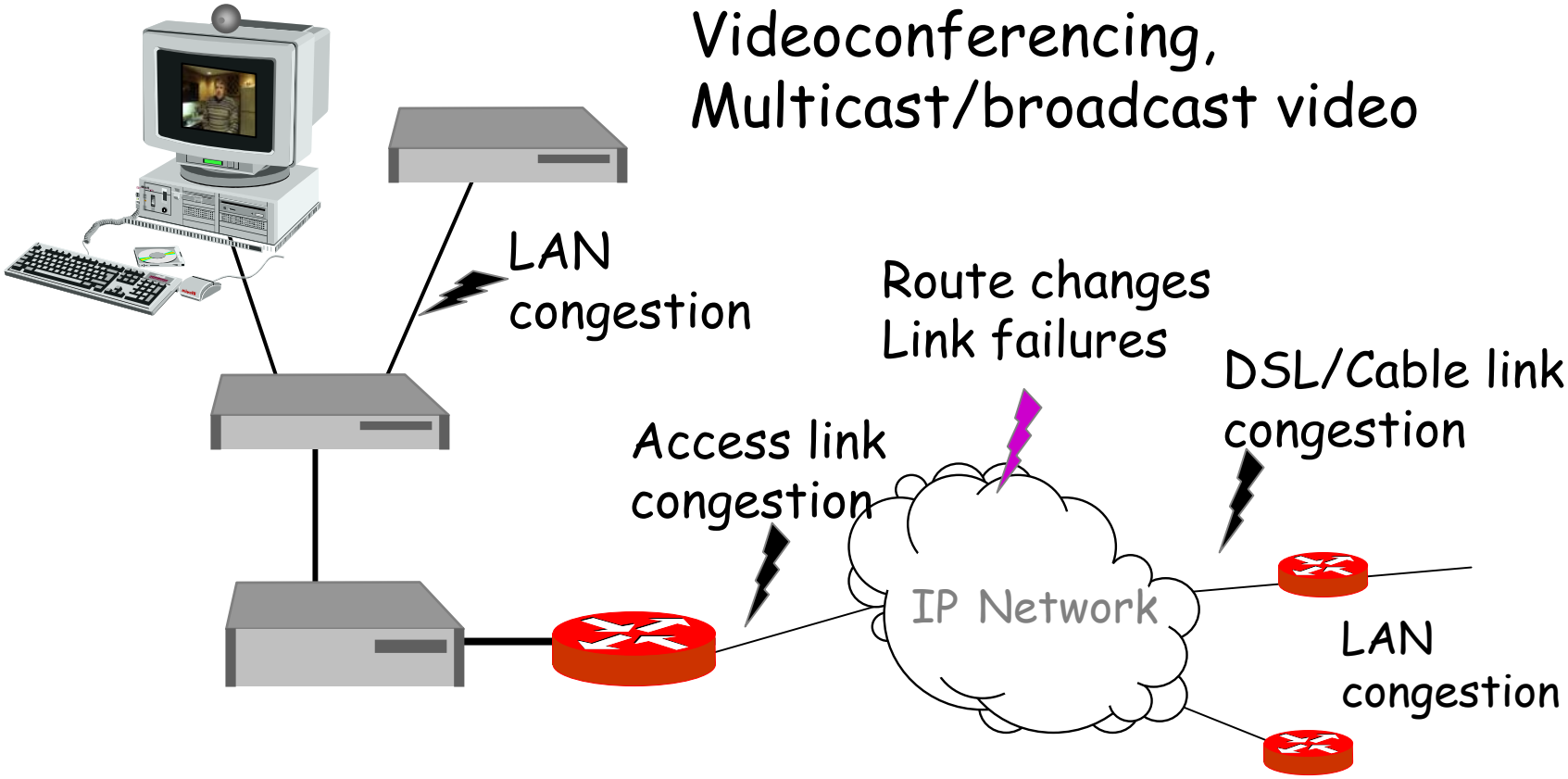
John Timms

johntimms@telchemy.com

Outline

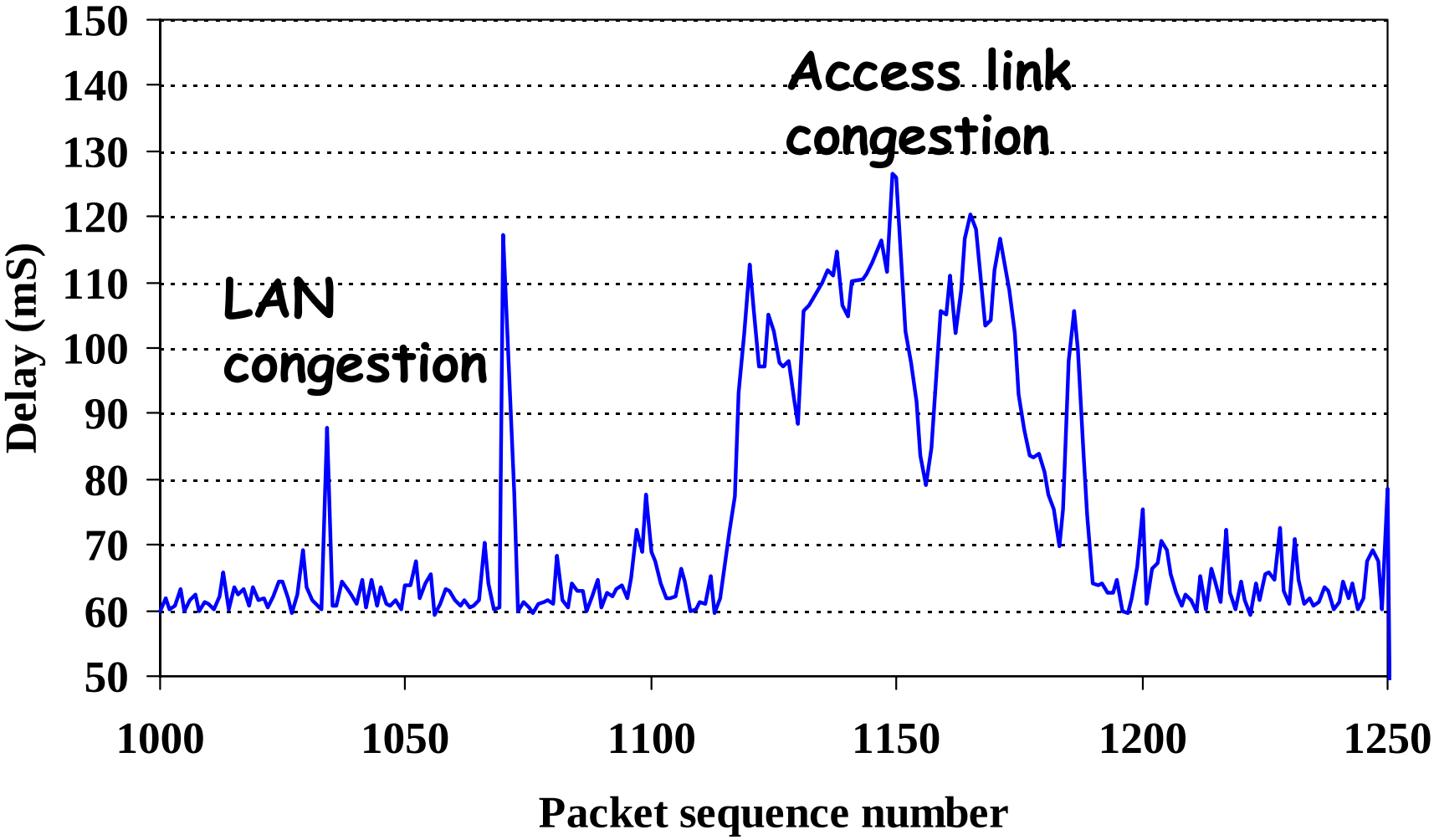
- Current issues and problems?
- Effects of network impairments on Video
- Improving the robustness of Video
- Pre-deployment testing for Video

Typical IP Network Problems

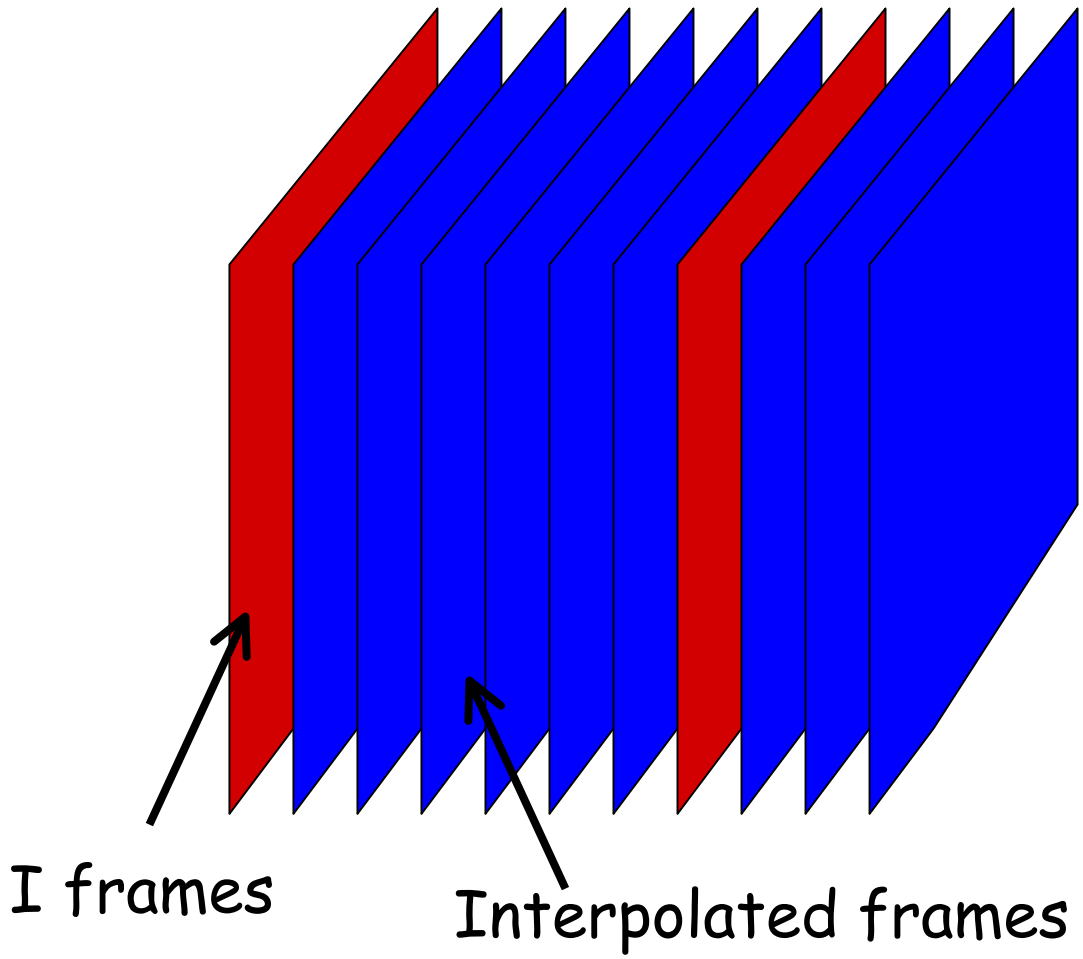


Transient problems

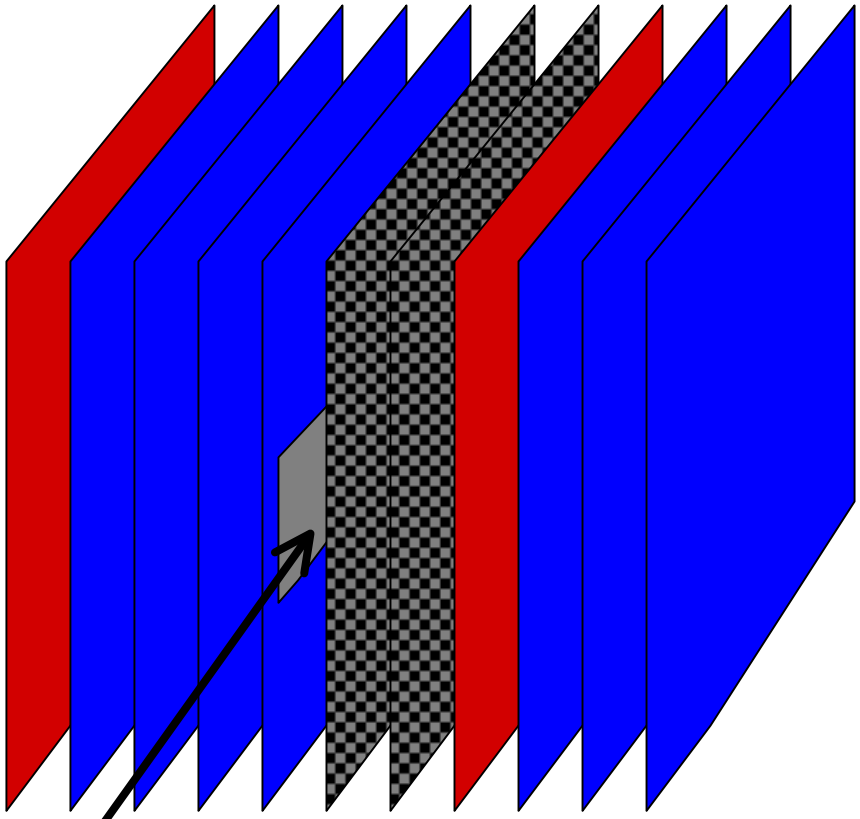
Impact on packet stream



Typical video stream



Effects of packet loss



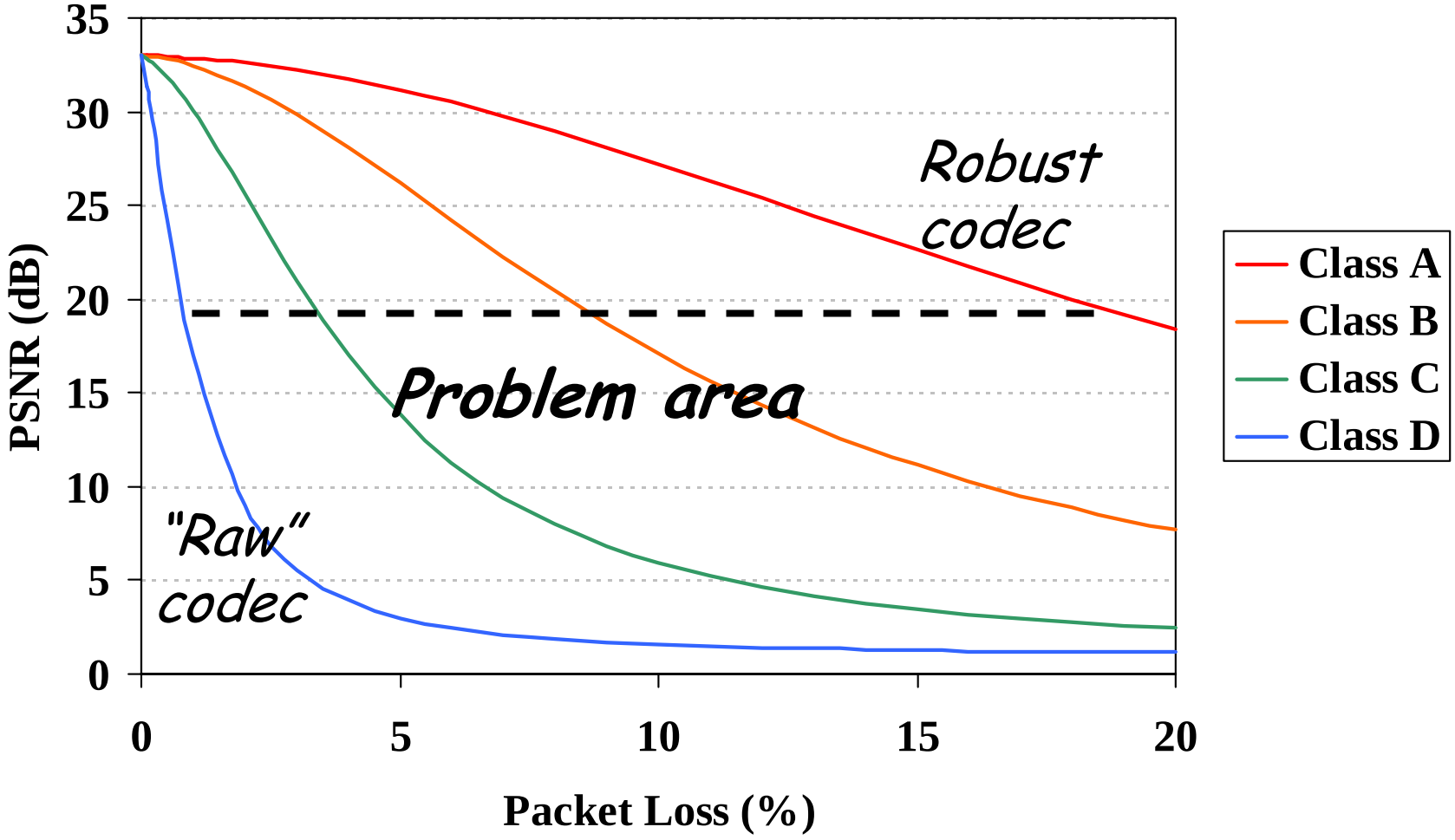
Packet loss

Loss extension due to interpolated frames

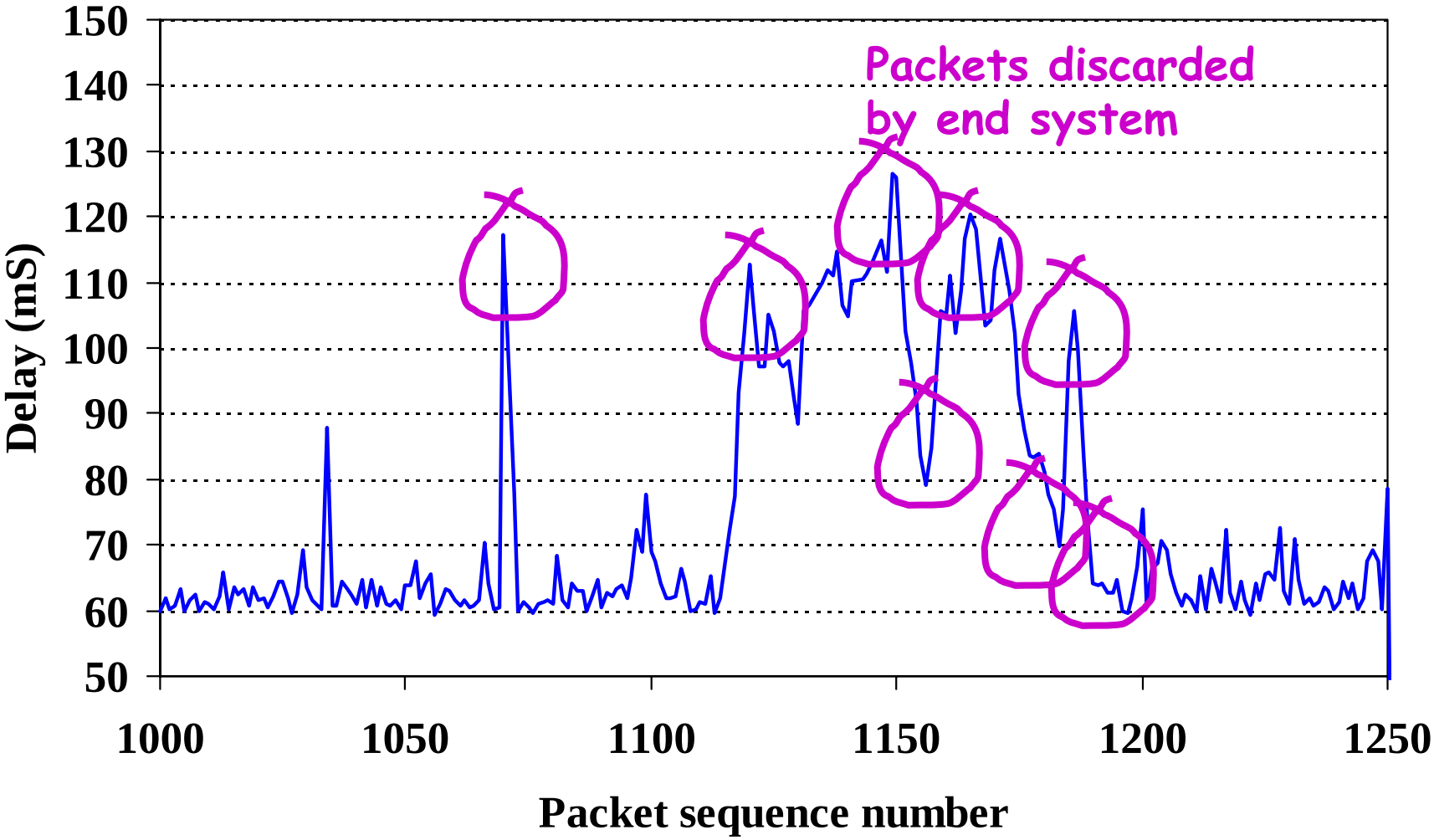
Robustness options

- Encoder options
  - Trade off between bandwidth and robustness
  - number of interpolated frames and robustness
  - Forward Error Correction/ Interleaving
- Decoder options
  - Use delayed frames for interpolation
  - Estimate content of missing frames

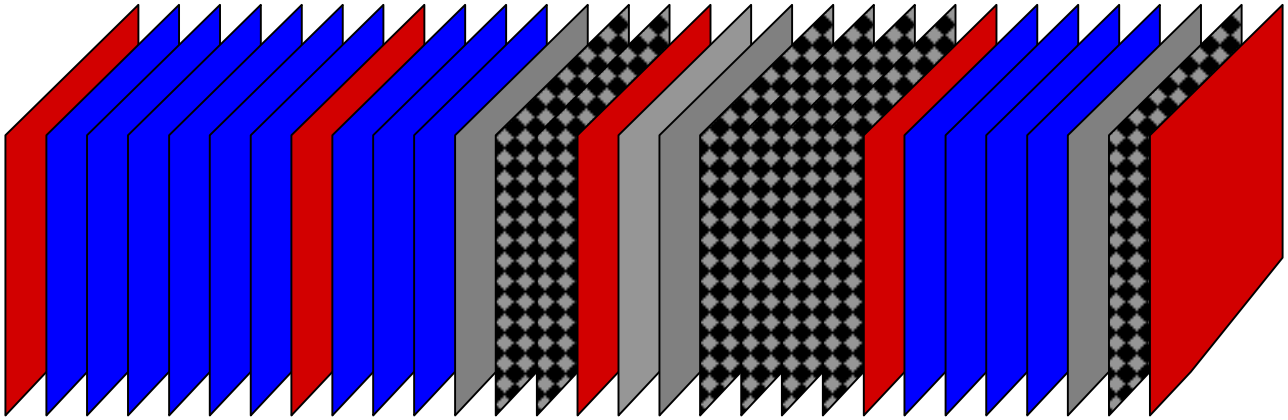
Effects of robustness strategies



Packet loss distribution



Effects of bursty loss

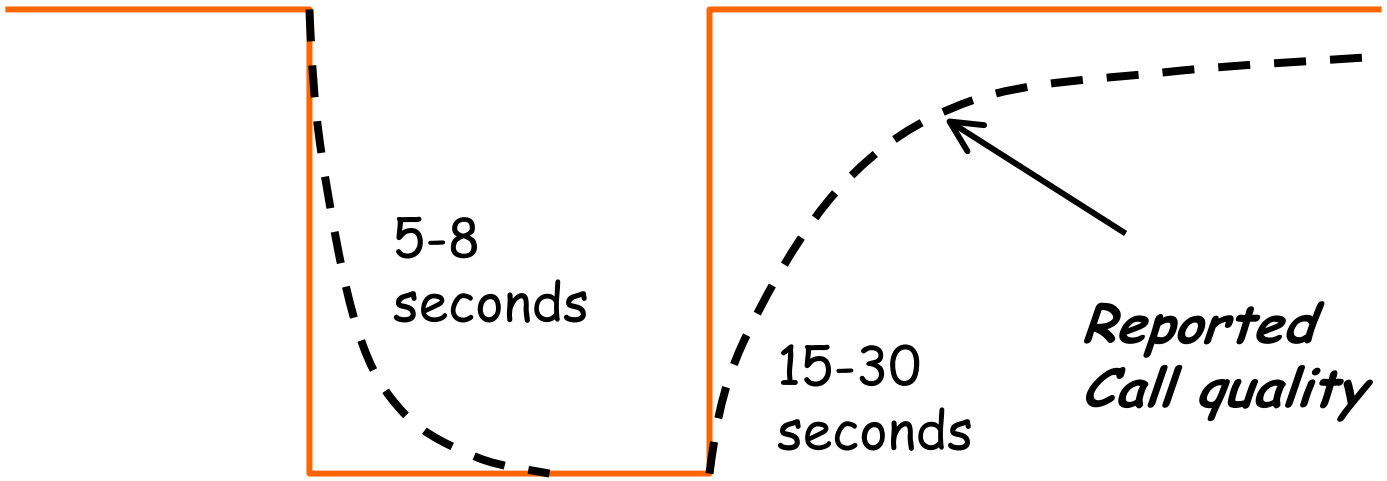


Good quality

Severely degraded quality

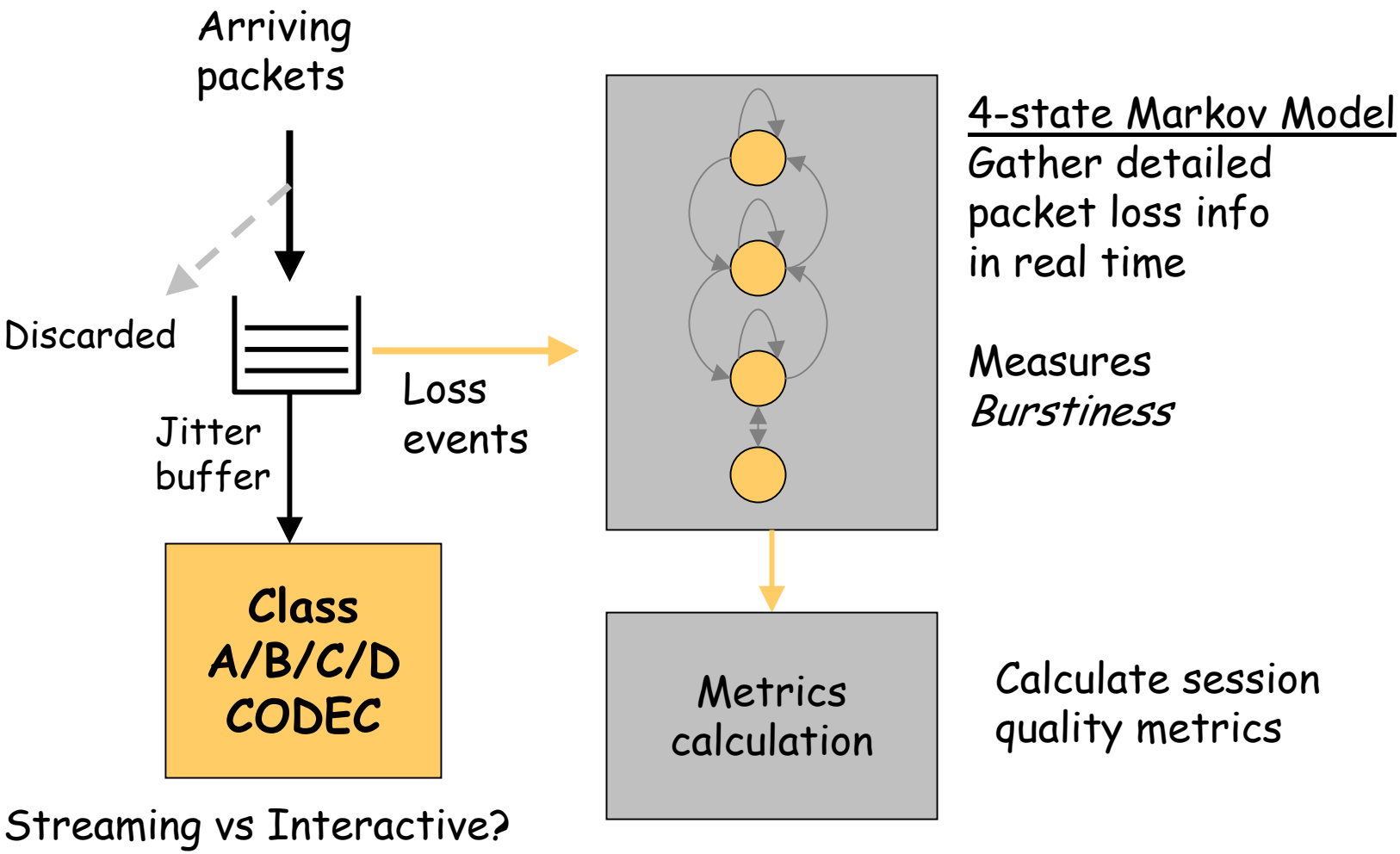
Effect - changing quality

Good quality most of the time



Poor quality during burst of loss/discards

Impact of network impairments



Why do IP transport testing?

- Prior to deployment – highlight problems affecting ability to deploy video
- After deployment
  - Identify problems before user does
  - Pre-session check that IP path will support adequate quality
- Helps with choice of CODEC

About Telchemy

- Based in Atlanta
- Develop technology for managing quality of service for Voice over IP and Video
- VQmon technology
  - Partners include Artiza, Brix Networks. Brooktrout, Finisar, Nortel Networks, Texas Instruments, Trinity Convergence, Visual Networks