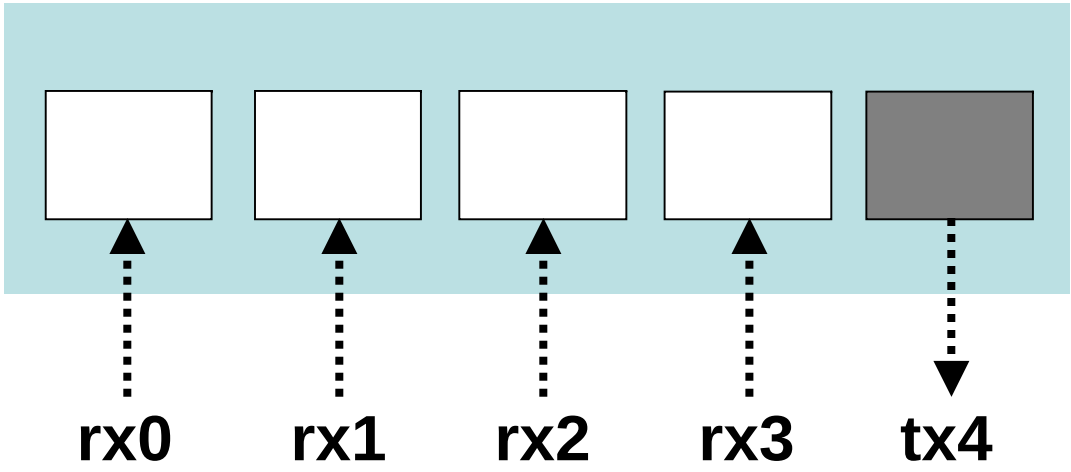
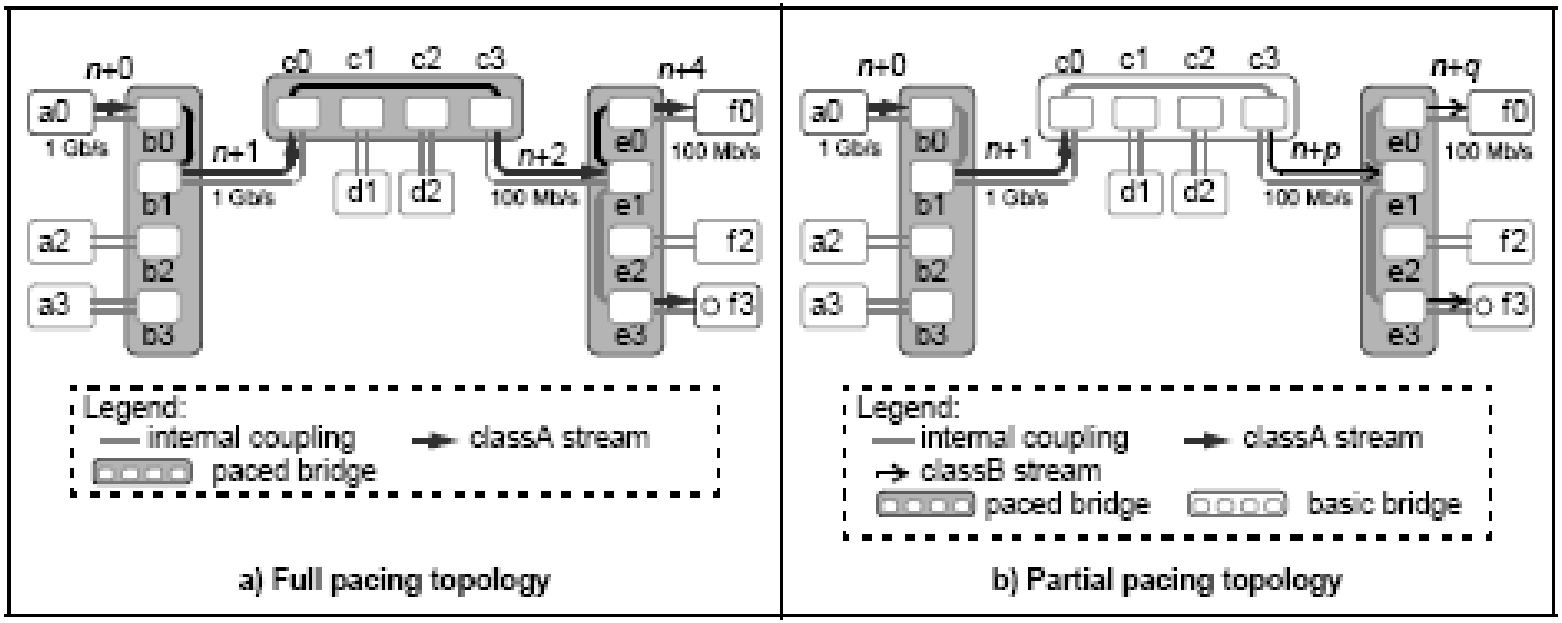
Overview

Pacing

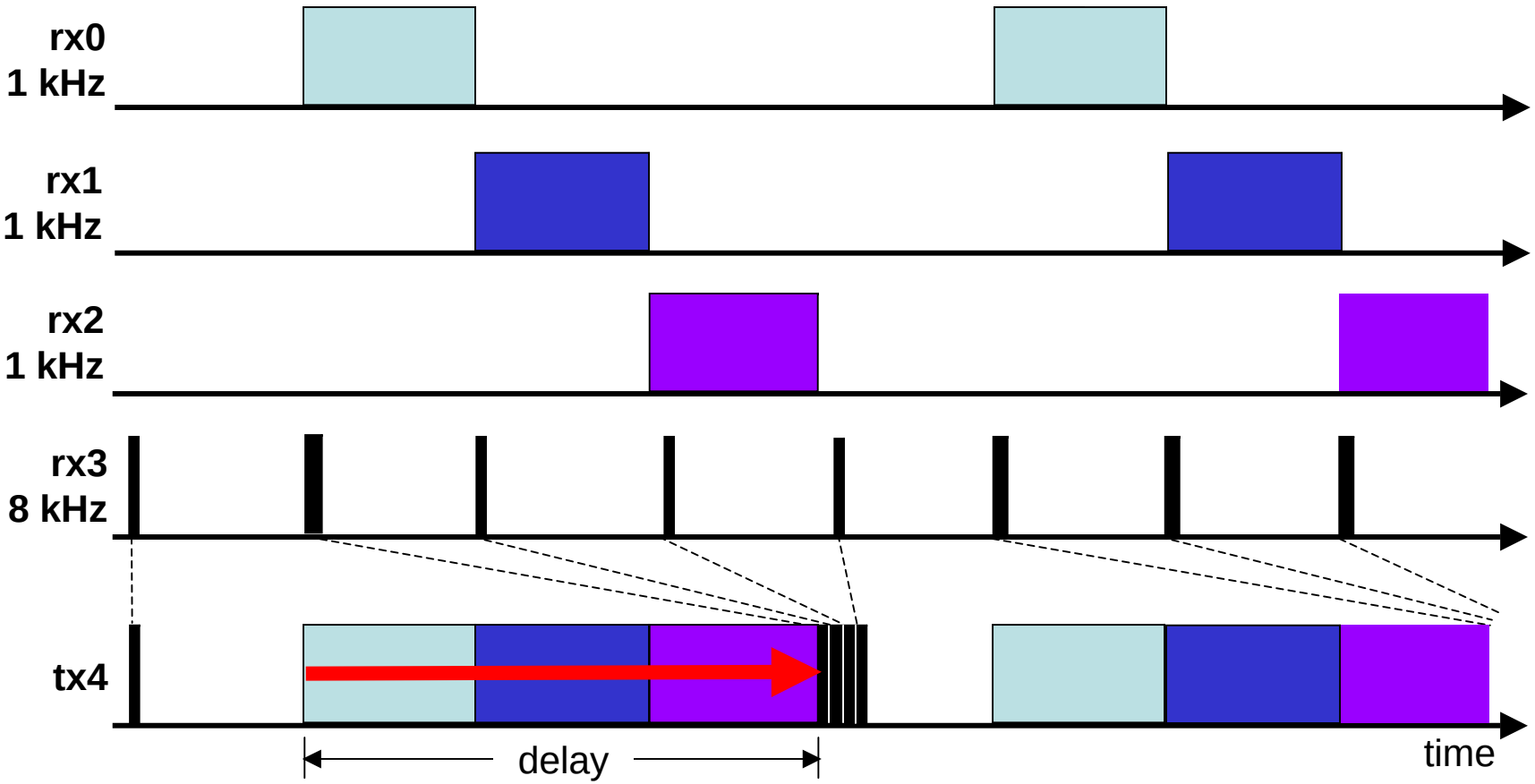
Consider possible congestion…



Predictable delays



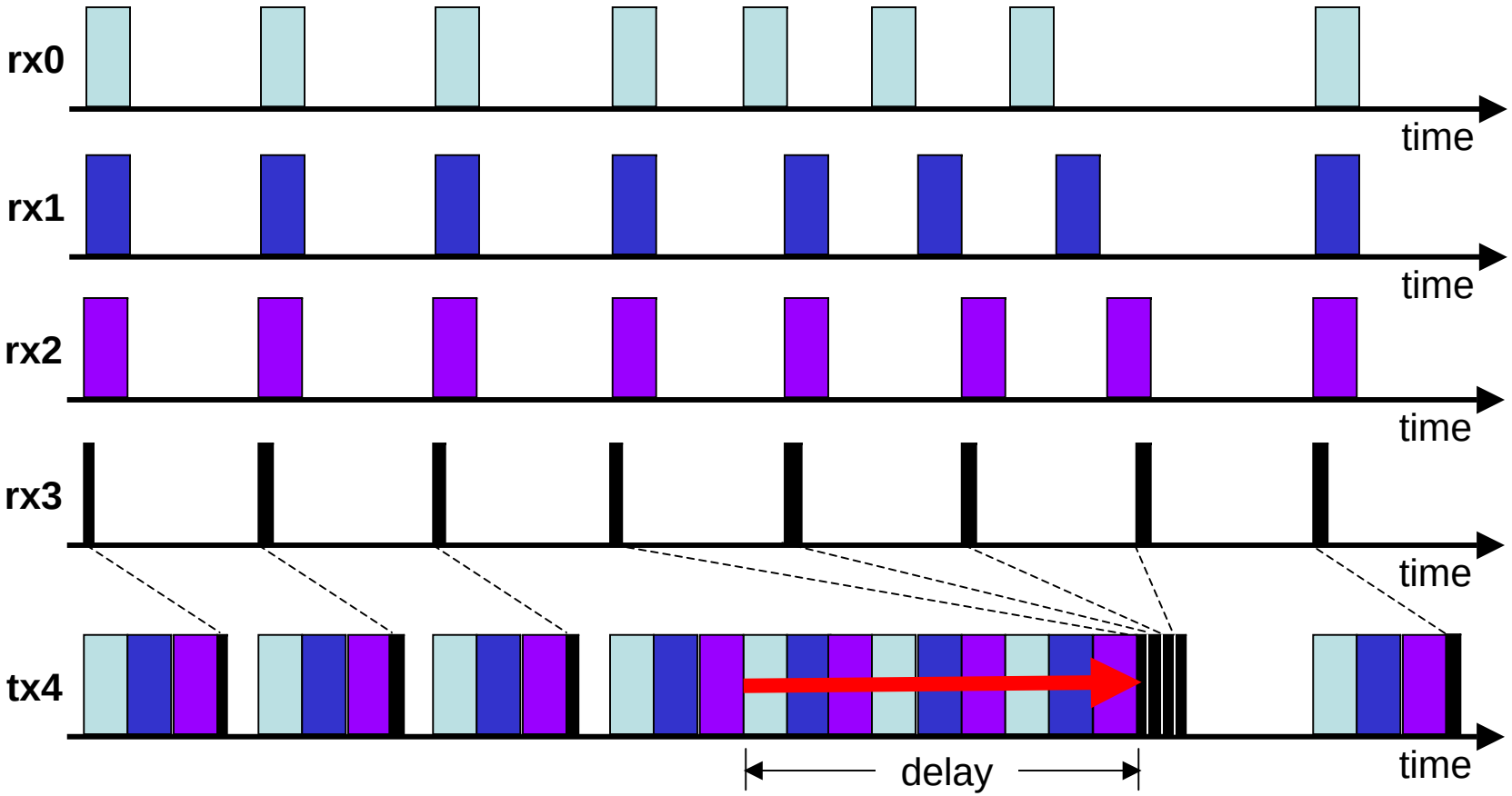
Bursting causes jitter



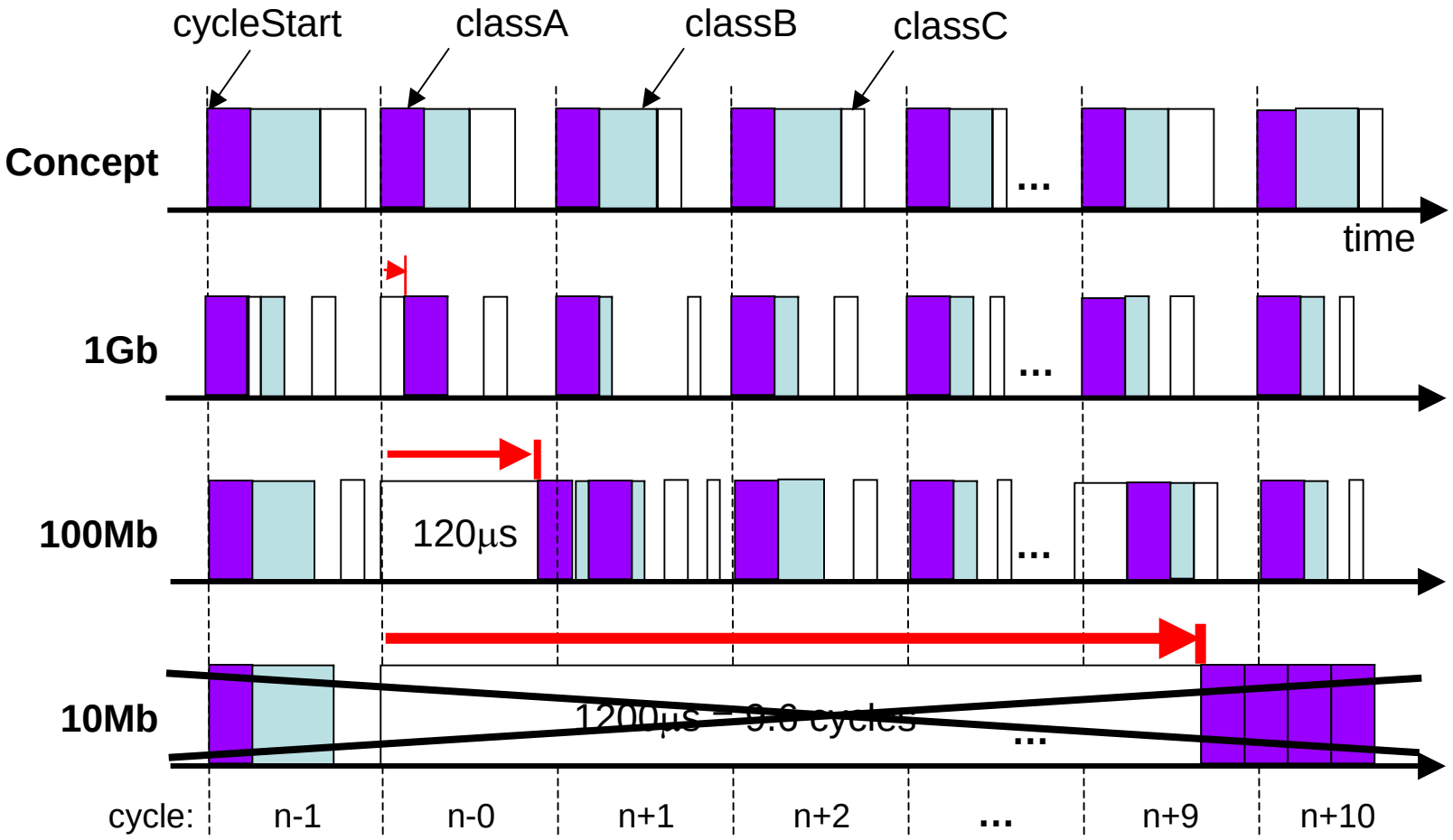
Bursting solution

- Byte-per-second measured on 125 μs
  - The highest latency, for classA
  - For simplicity, these intervals are synchronized
- Legacy prioritized traffic
  - The higher latency, for classB
  - Prioritized for precedence over best effort
  - But, still constrained to ensure 25% for classC

Bunching causes jitter



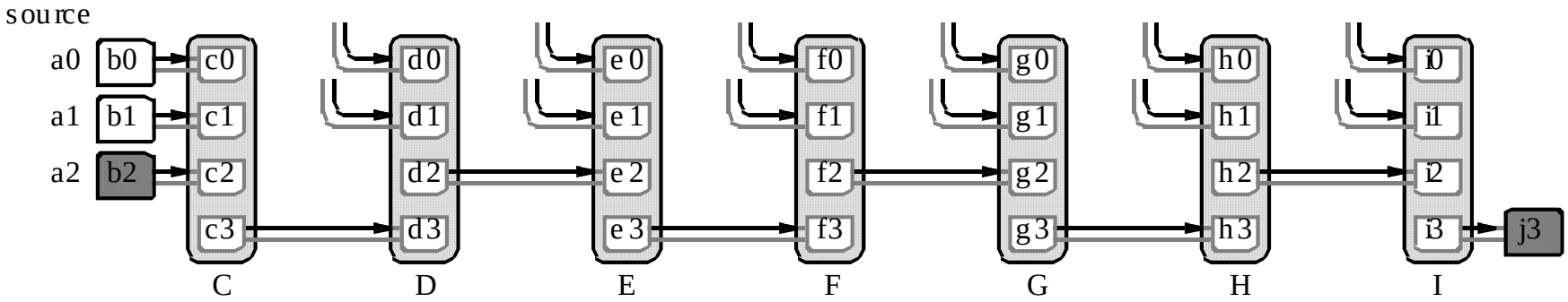
Frame transmission timings



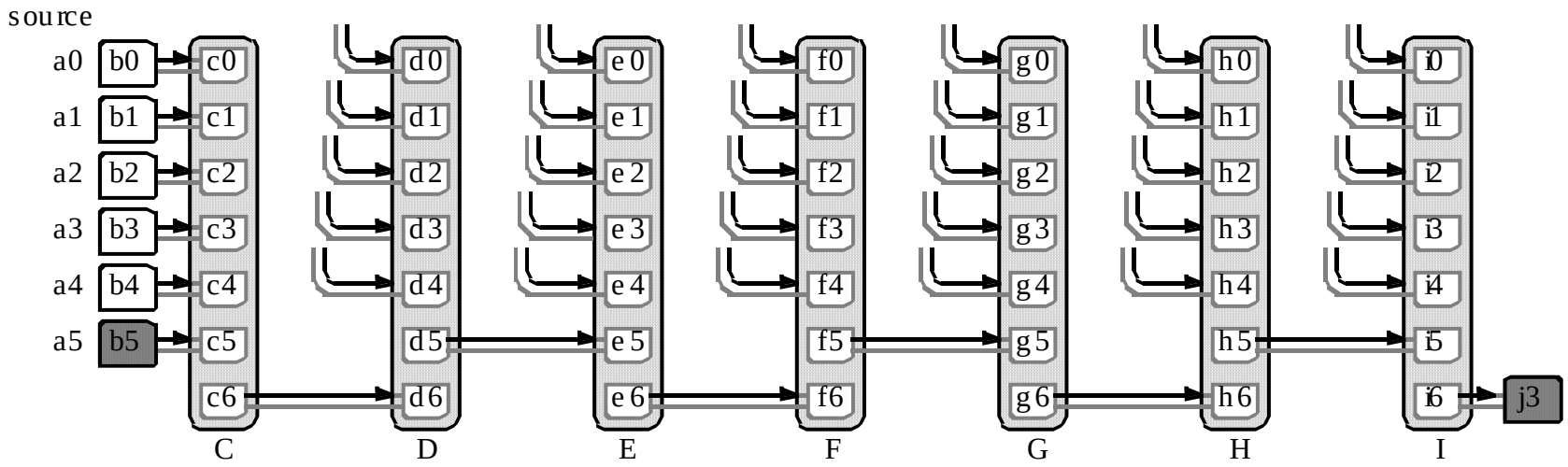
Bunching solution

- Byte-per-second measured on 125 μs
  - The highest latency, for classA
  - For predictability, these intervals are synchronized
- Legacy prioritized traffic
  - The higher latency, for classB
  - Prioritized for precedence over best effort
  - But, still constrained to ensure 25% for classC
- Bridges introduce fixed-cycle classA delays
  - Sometimes could be faster
  - But, sometimes “could” be slower

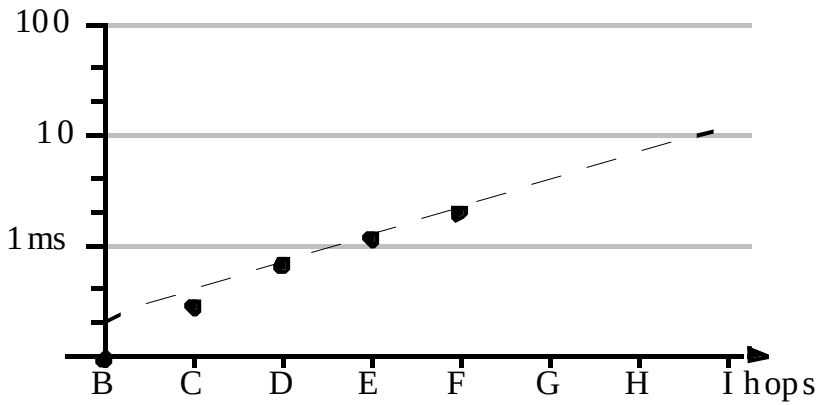
Bunching occurrences (4-port)



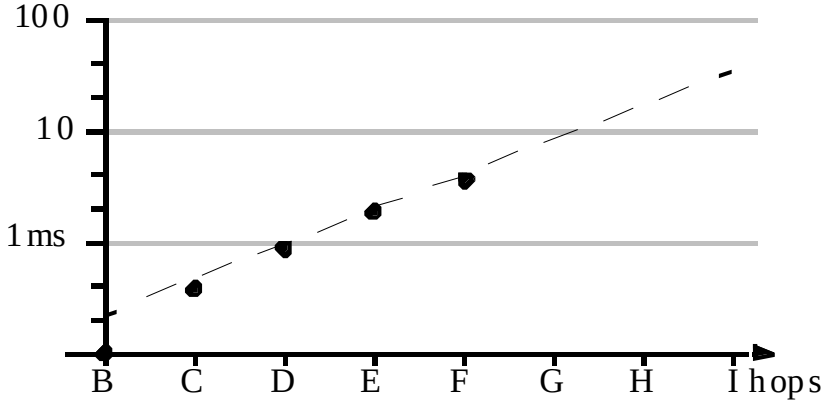
Bunching occurrences (7-port)



Bunching occurrences

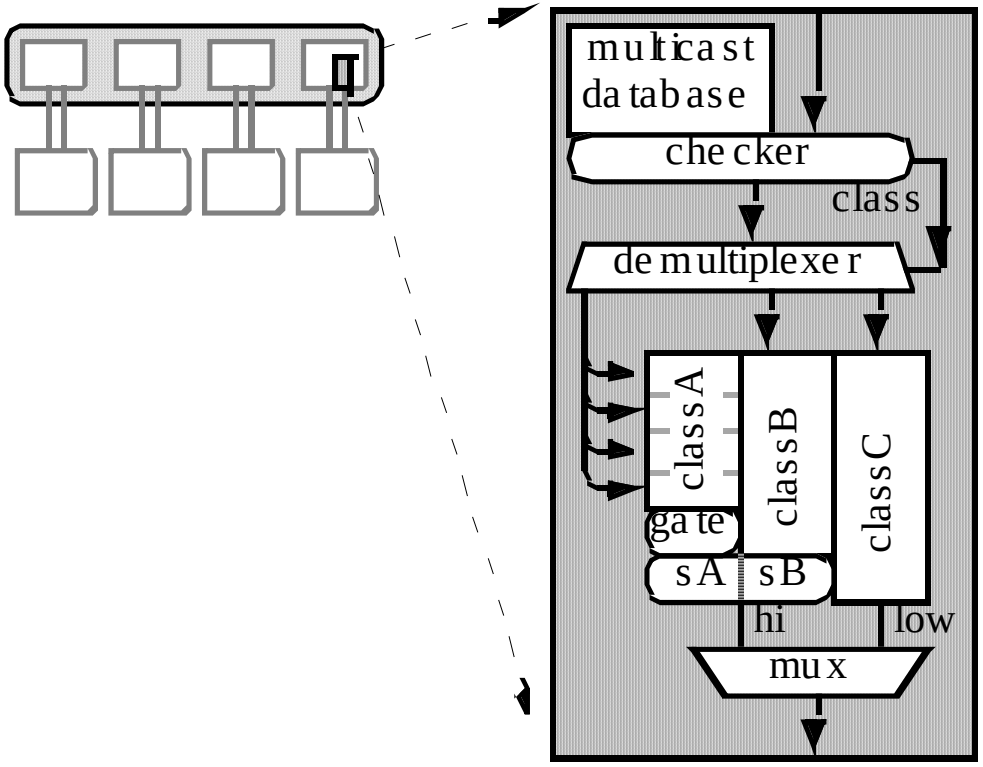


4-port topology

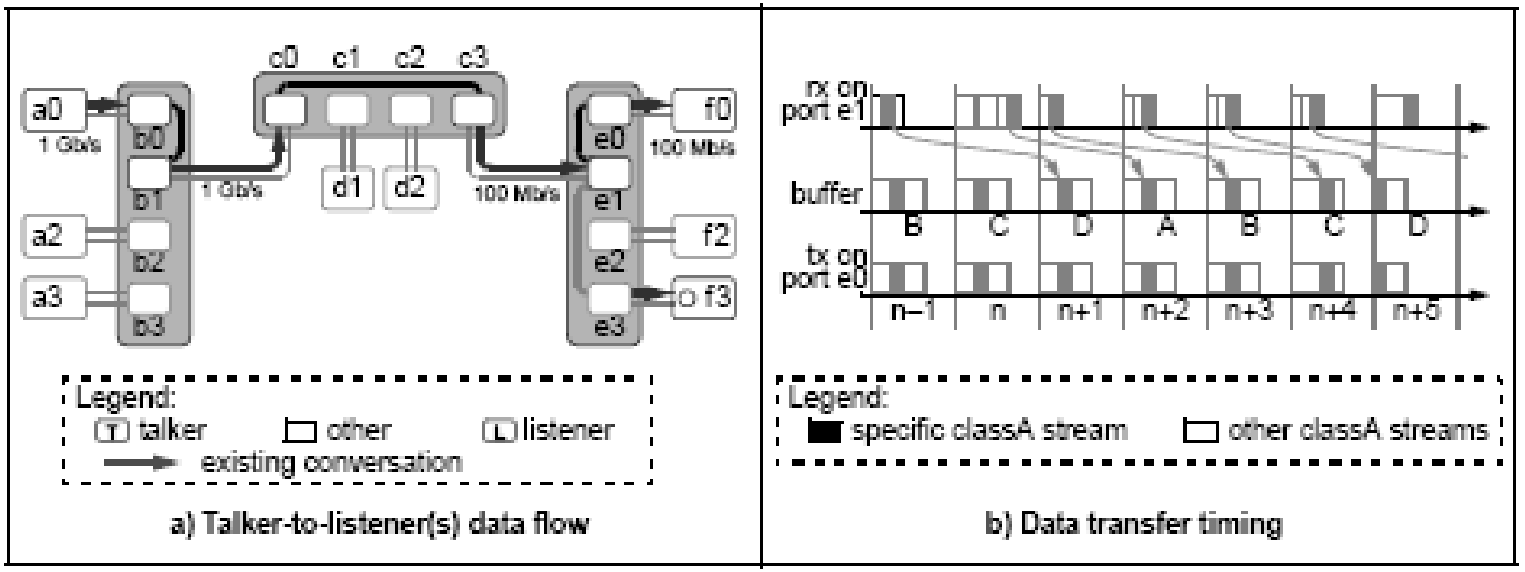


7-port topology

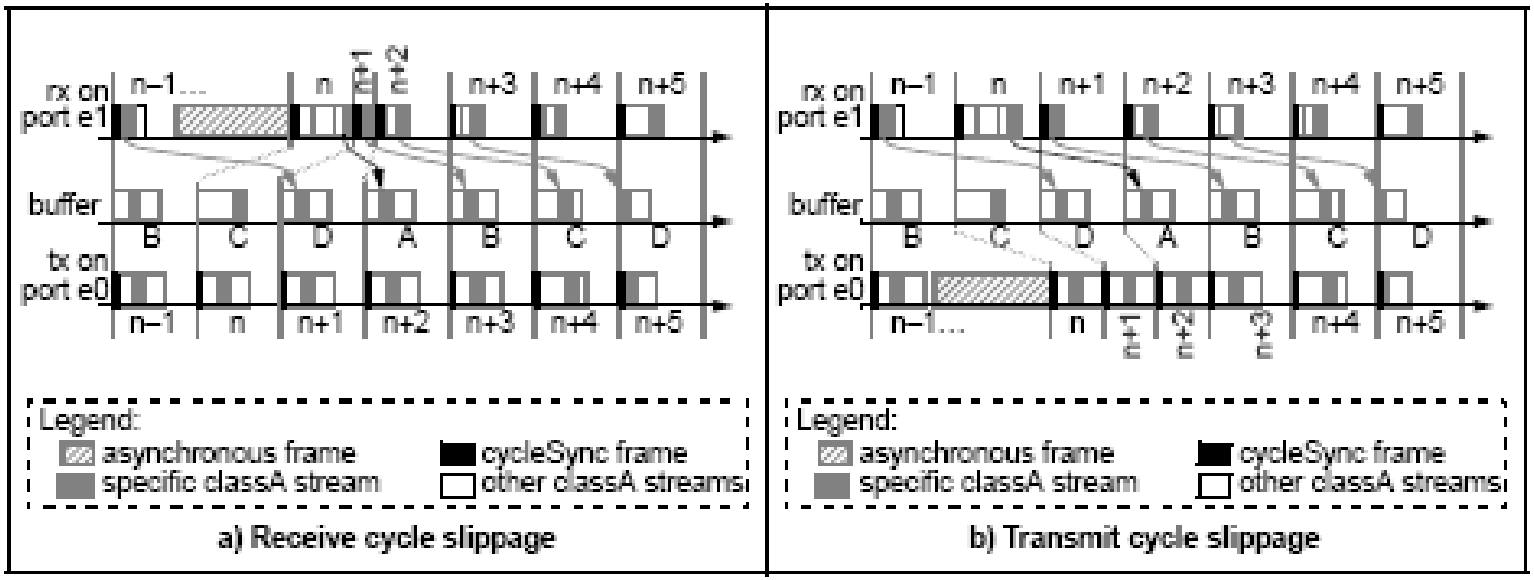
Limited service class processing



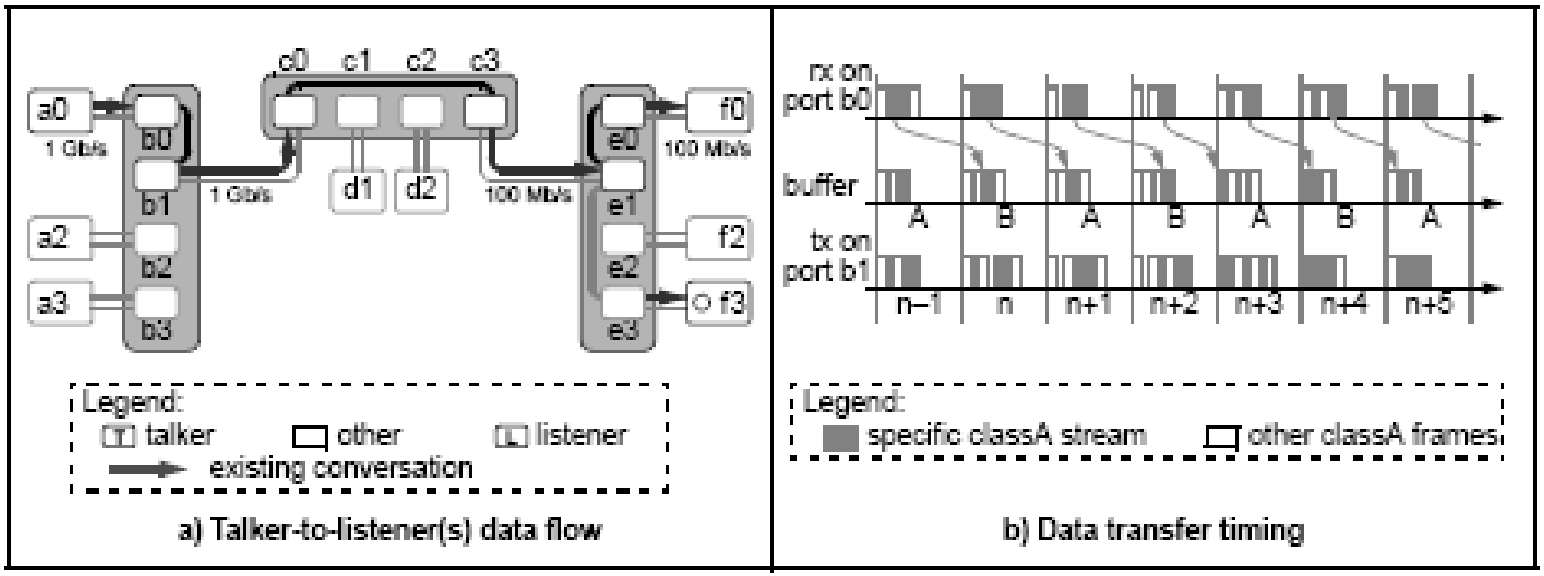
Fixed 100 Mb/s delays



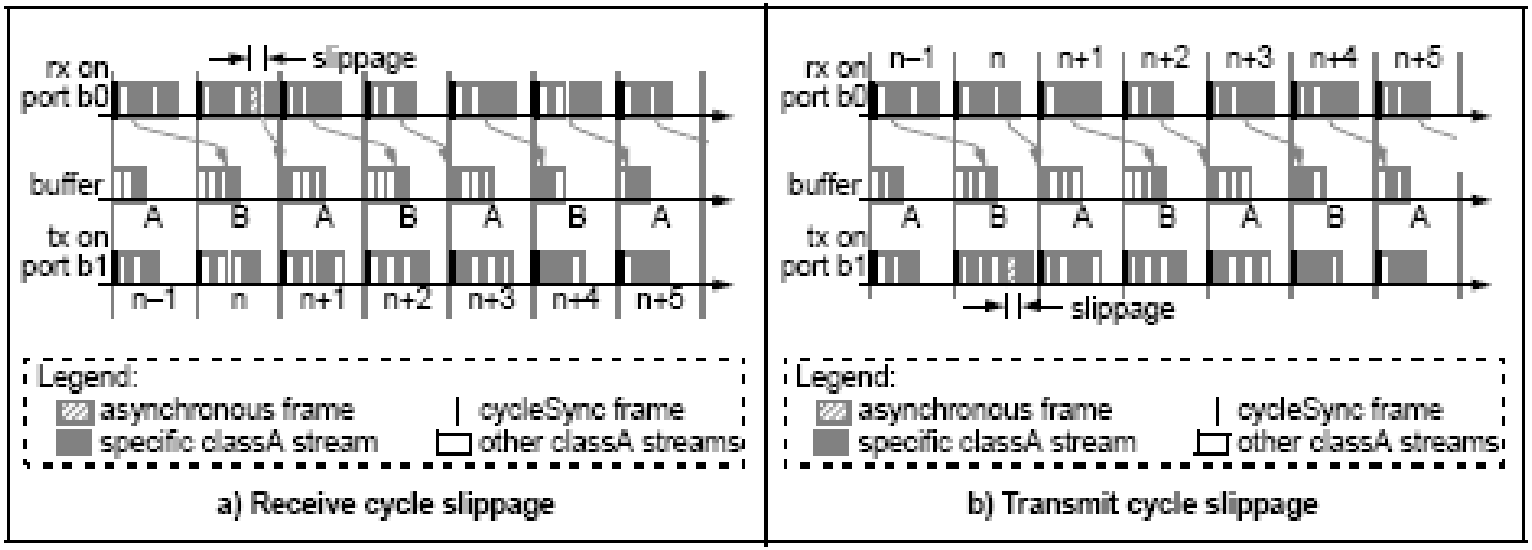
Slipped 100 Mb/s cycles



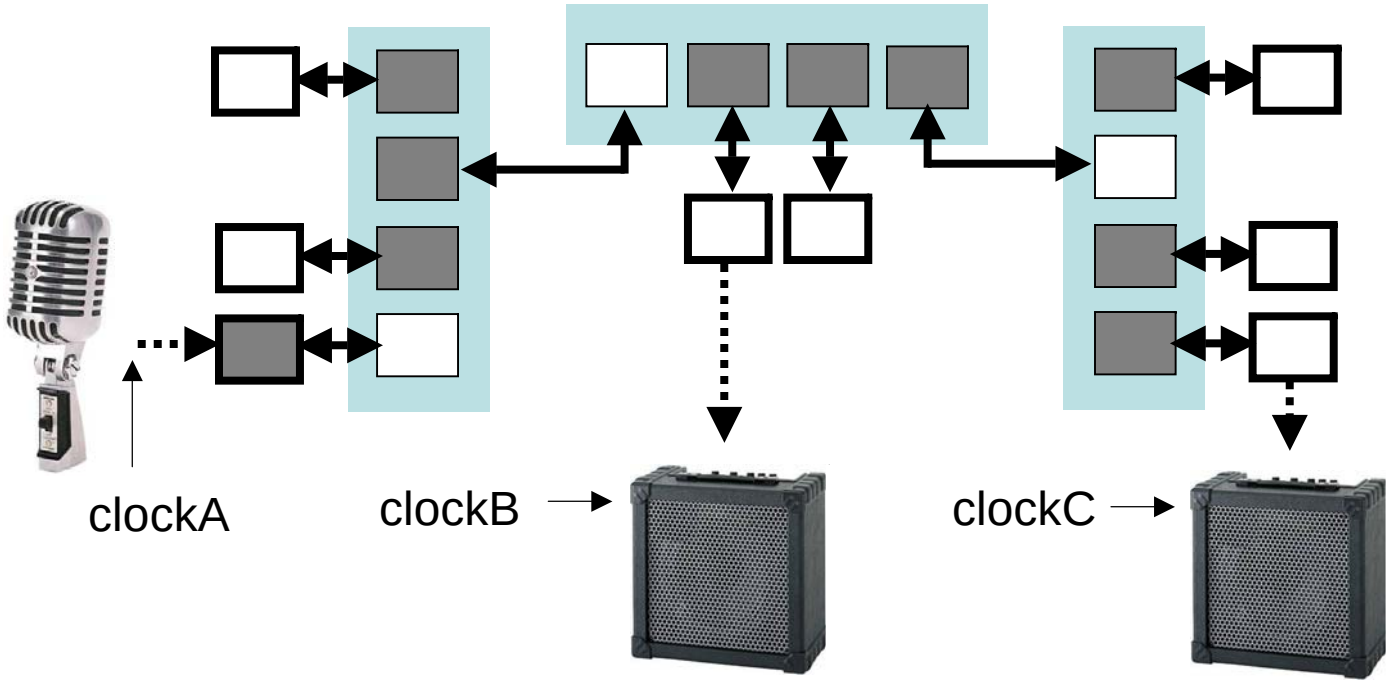
Fixed 1 Gb/s delays



Slipped 1 Gb/s cycles



Synchronized reception/presentation



No long-term drift: clockA, clockB, clockC
Clock jitter: sub nanosecond (after PLL)