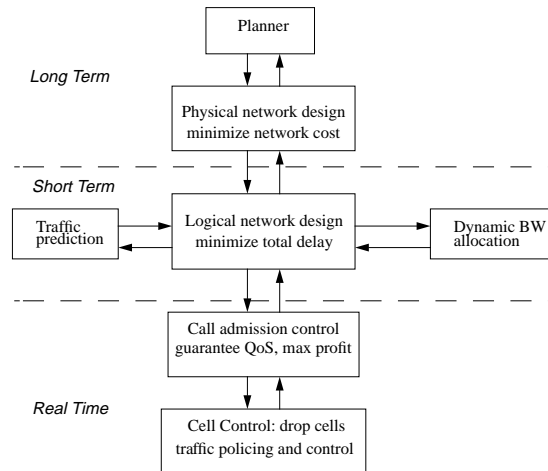# Broadband Integrated Services Digital Network Planning

Zhigang Qin, Felix F. Wu,
Wendy W. Wang, Paul M. Aoki, Tetiana Lo

Department of Electrical Engineering and Computer Sciences
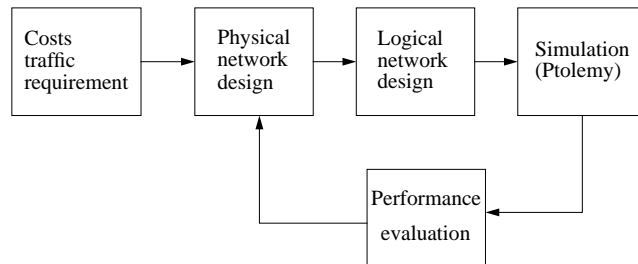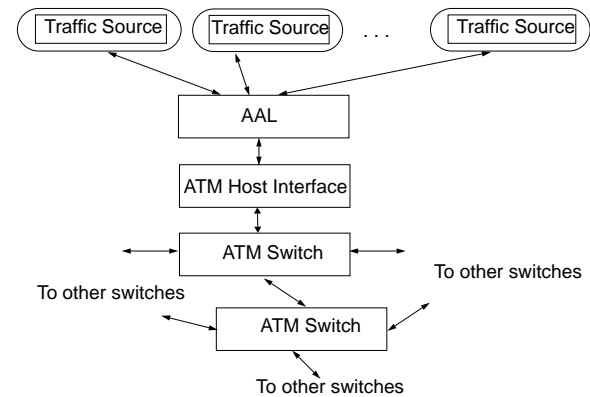University of California at Berkeley

March 10, 1995

B-ISDN Network Planning

Planning Control Flow
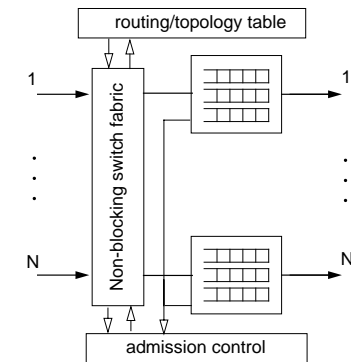

Simulator Architecture

Simulation architecture

Current Implementation

- Traffic Models
  - Data
  - Audio
  - Video
- Switch Model
  - Output queueing
- Routing Control
  - Least hop count and depth-first search
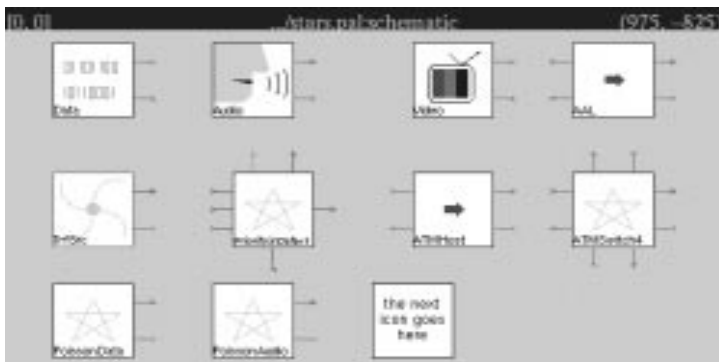- Admission Control
  - Effective bandwidth

Switch Models

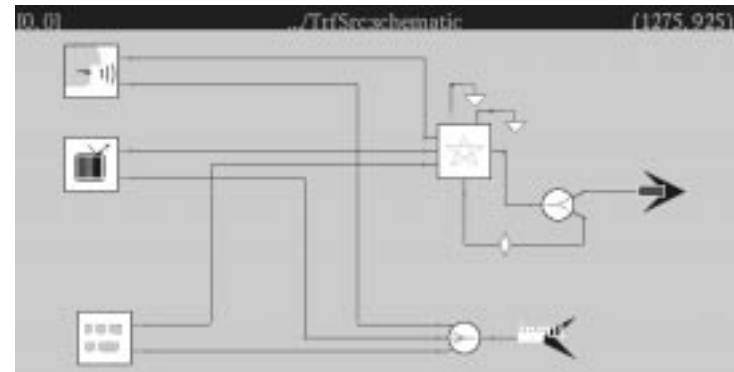Each buffer has three different queues for high, intermediate, and low priority cells.
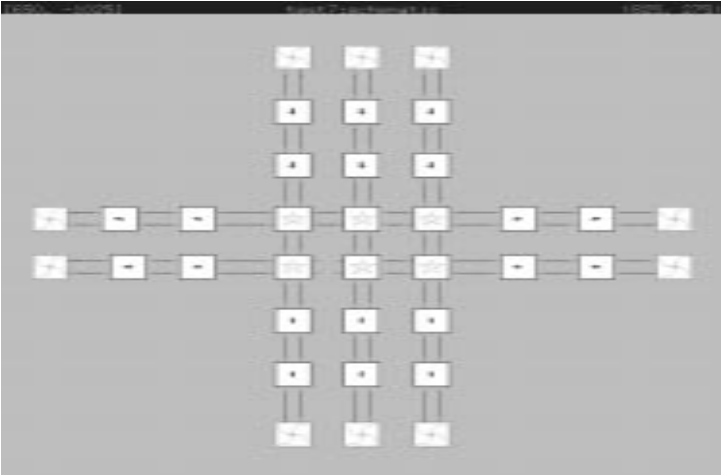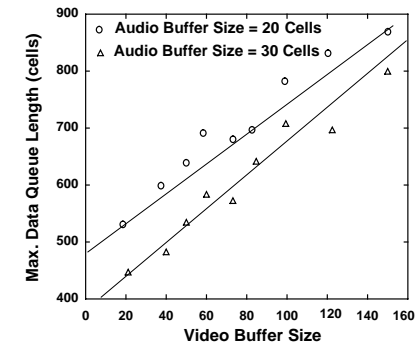
ATM Simulation Library

Traffic Source Model

Network Topology

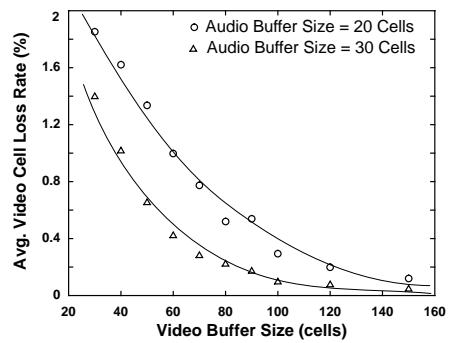

Simulation Results -- Effect of buffer size
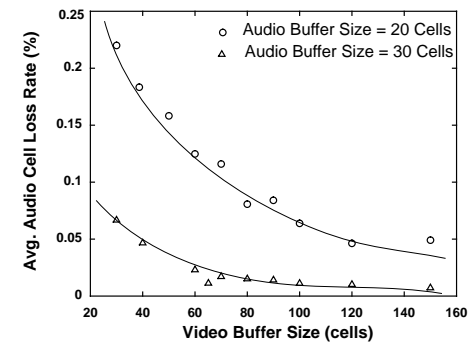

Maximum data queue length vs. video buffer size

Simulation Results -- Effect of buffer size
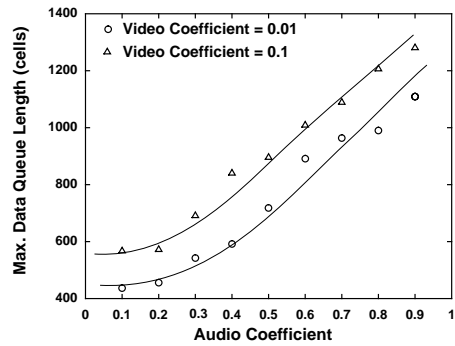

Average video cell loss rate vs. video buffer size

Simulation Results -- Effect of buffer size
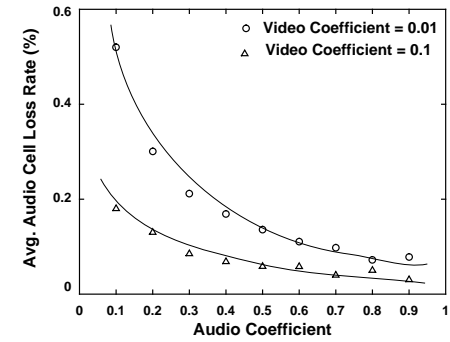

Average audio cell loss rate vs. video buffer size

Simulation Results -- Admission control

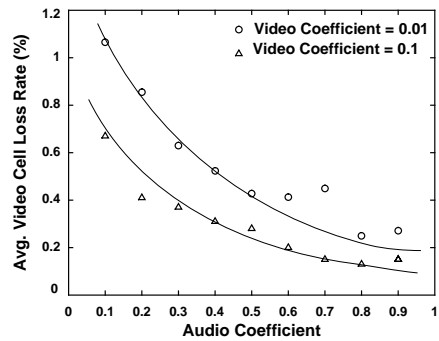Maximum data queue length vs. audio coefficient

Simulation Results -- Admission Control

Average audio cell loss rate vs. audio coefficient

Simulation Results -- Admission Control

Average video cell loss rate vs. audio coefficient