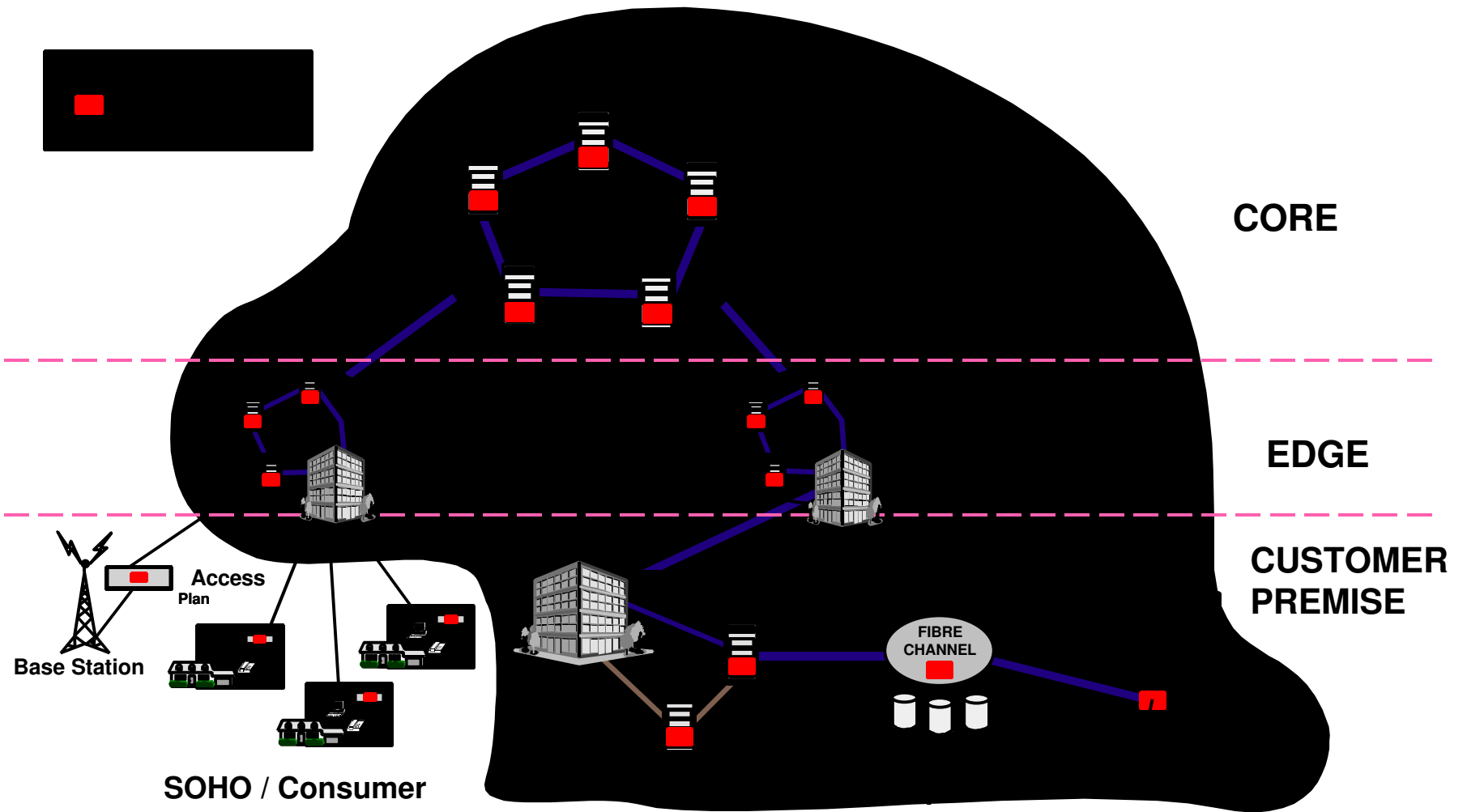


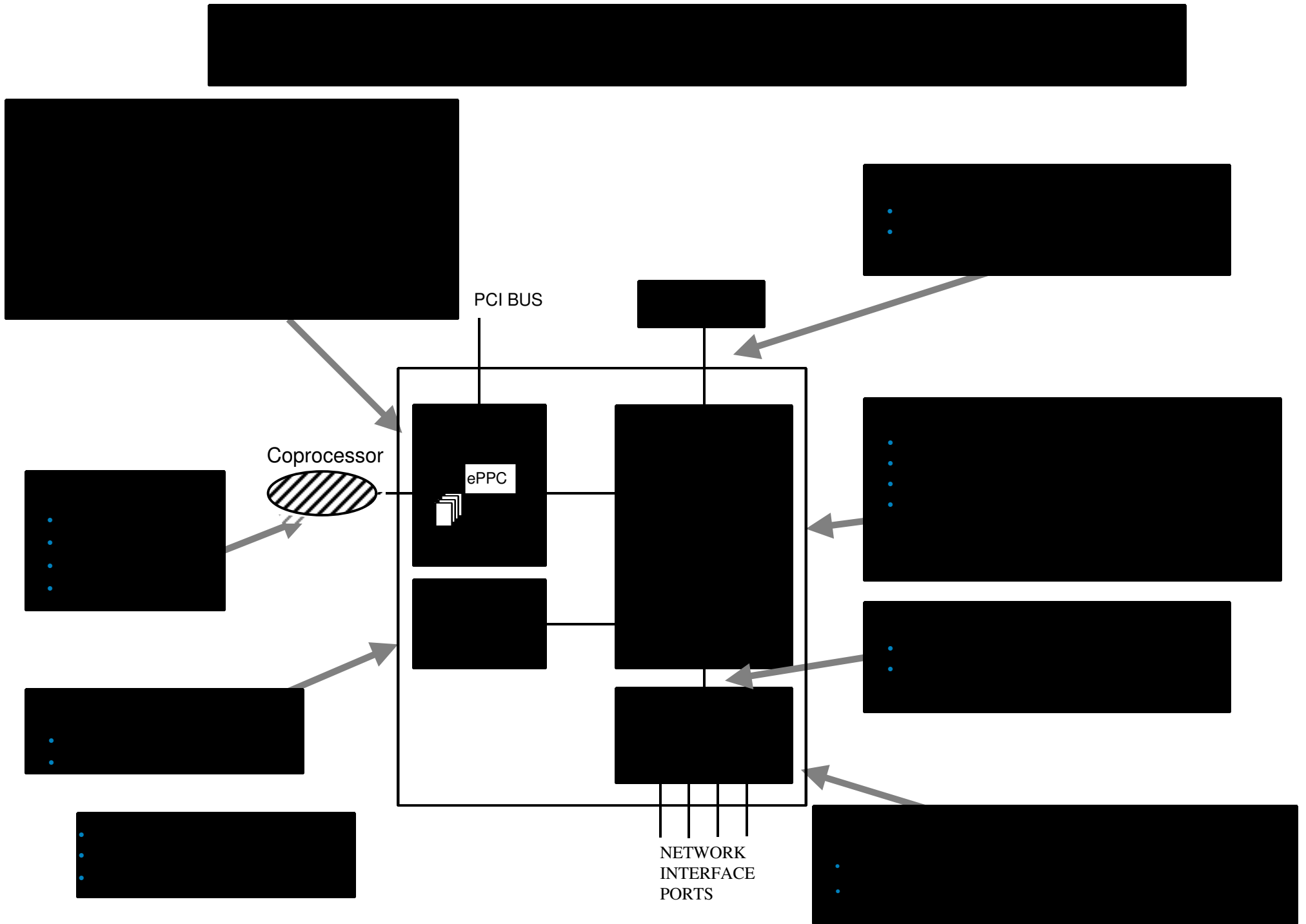


Hot Chips Symposium, August 13-15, 2000

Dr. Marco Heddes

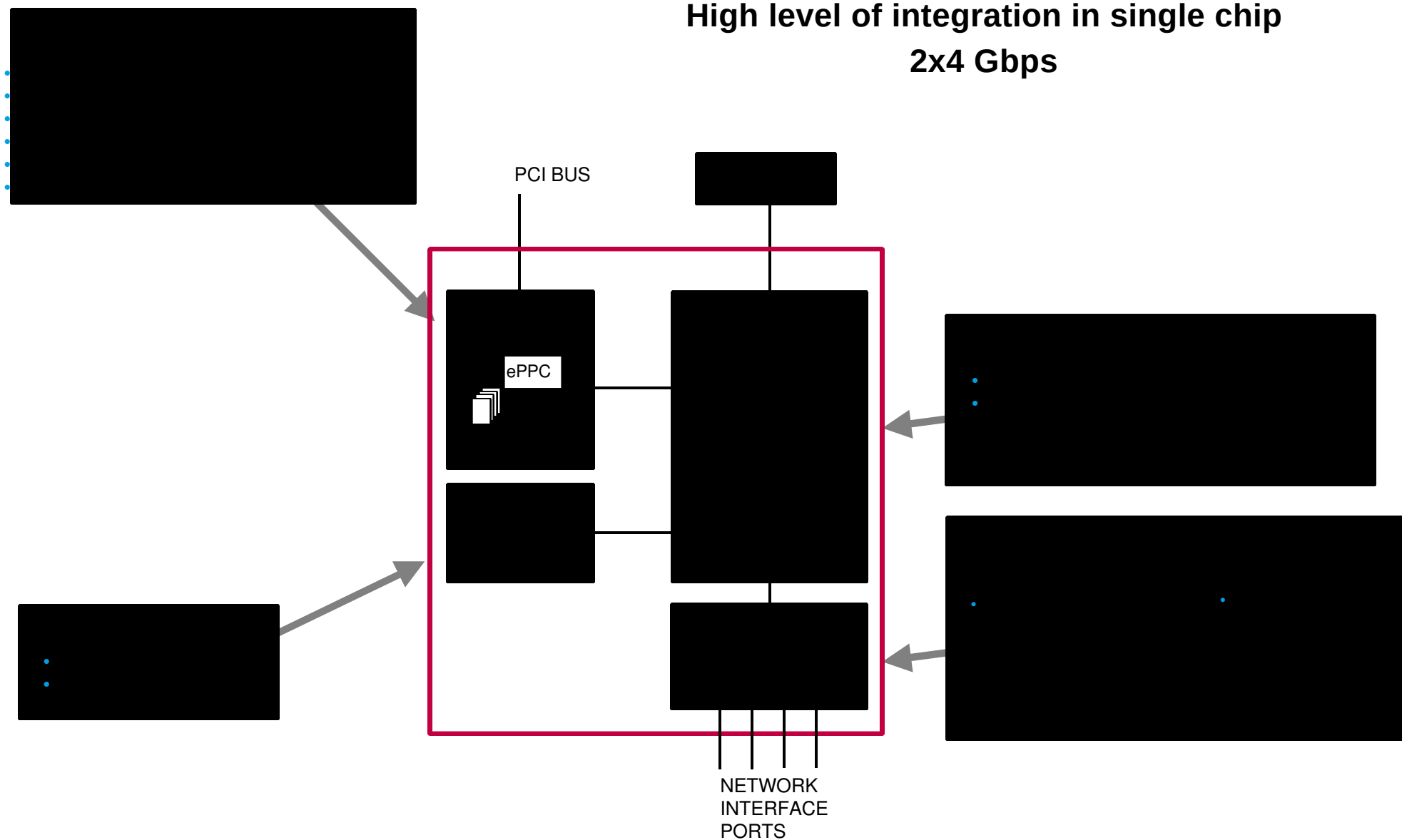
IBM Microelectronics, RTP, NC

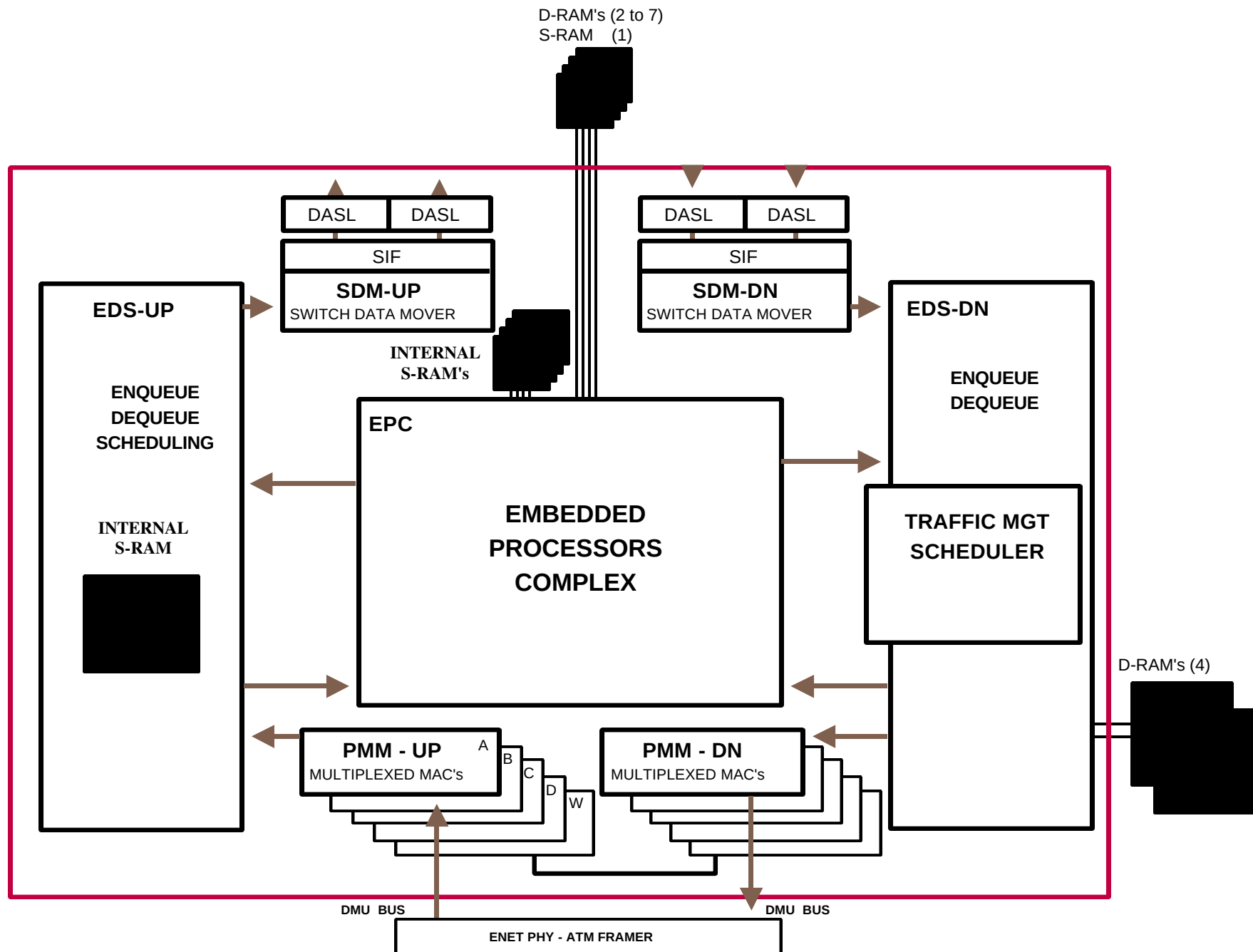


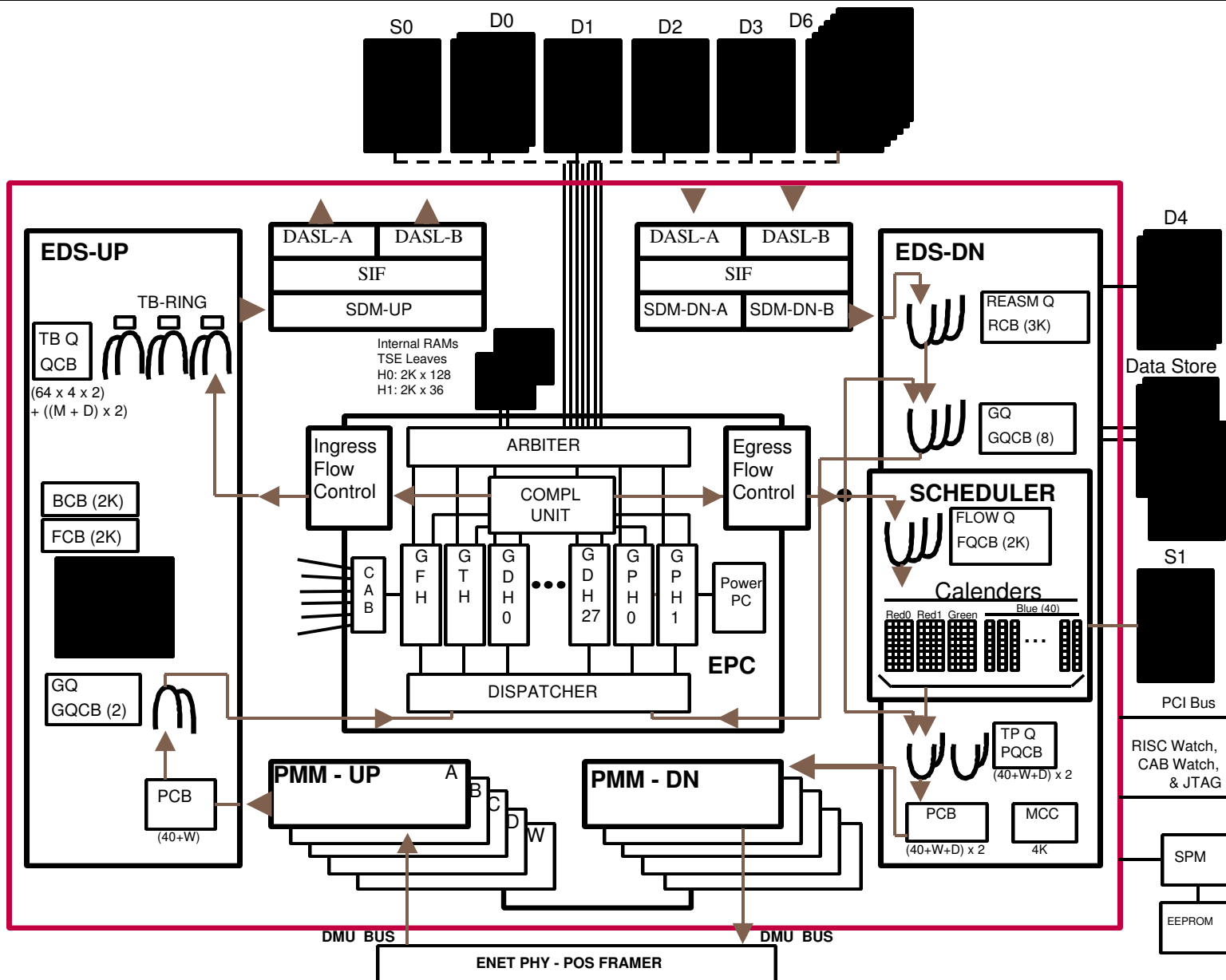


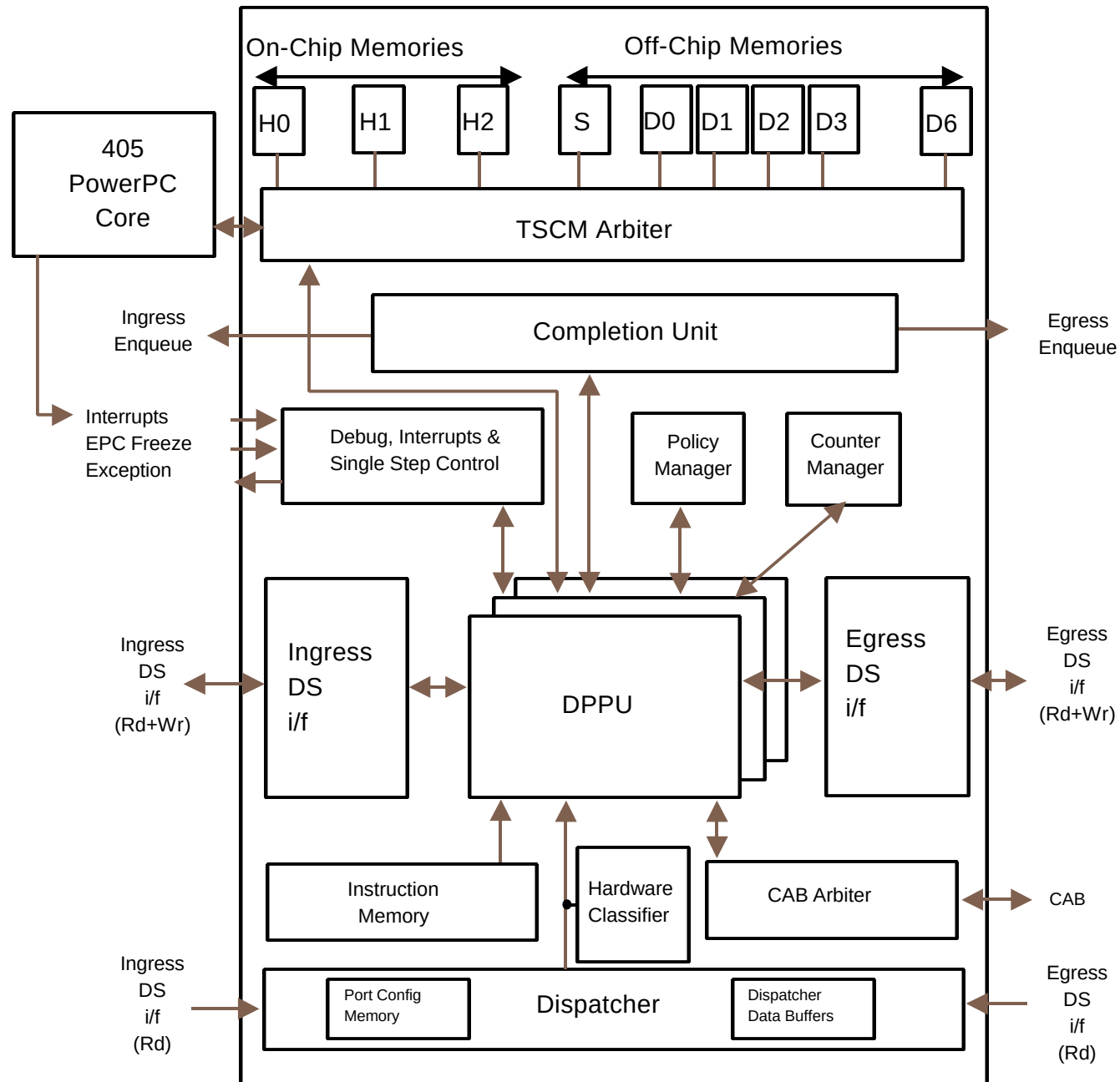
# RAINIER

High level of integration in single chip  
2x4 Gbps









# Tree Algorithms

## **3 DIFFERENT TREE TYPES TUNED FOR DIFFERENT APPLICATIONS:**

- FM = FIXED MATCH TREE  
IDENTICAL SIZE FOR ALL THE KEYS OF THE TREE SUCH AS: L2 FORWARDING, VPI/VCID LOOK-UP, IPX FORWARDING, RSVP TRAFFIC MANAGEMENT POLICY
- LPM = LONGEST PREFIX MATCH  
VARIABLE LENGTH (BUT SAME STARTING POINT) KEYS IN THE TREE SUCH AS: IP FORWARDING, SUBNETTING CONCEPT
- SMT = SOFTWARE MANAGED TREE
  - ALL POSSIBLE COMBINATIONS OF NON-CONTIGUOUS BIT PATTERNS INSIDE THE KEYS OF THE TREE
  - RANGE COMPARISON (SMALLER/EQUAL/GREATER) FOR EACH BIT PATTERN SUCH AS: L3 FILTER RULES, L4 POLICIES





## **NO SCHEDULER**

- 2 TARGET PORT QUEUES PER PORT (2 ABSOLUTE PRIORITIES)

## **SCHEDULER**

- TRAFFIC MANAGEMENT PARAMETERS PER FLOW (CAN BE COMBINED):
  - GUARANTEED BANDWIDTH
  - BEST EFFORT WITH WEIGHTED FAIRNESS
  - MAXIMUM CONTROLLED BANDWIDTH (WITH BEST EFFORT)
  - MAXIMUM BURSTSIZE
  - PRIORITY (LOW LATENCY PARAMETER)

