Feasibility Analysis of Caller Prediction
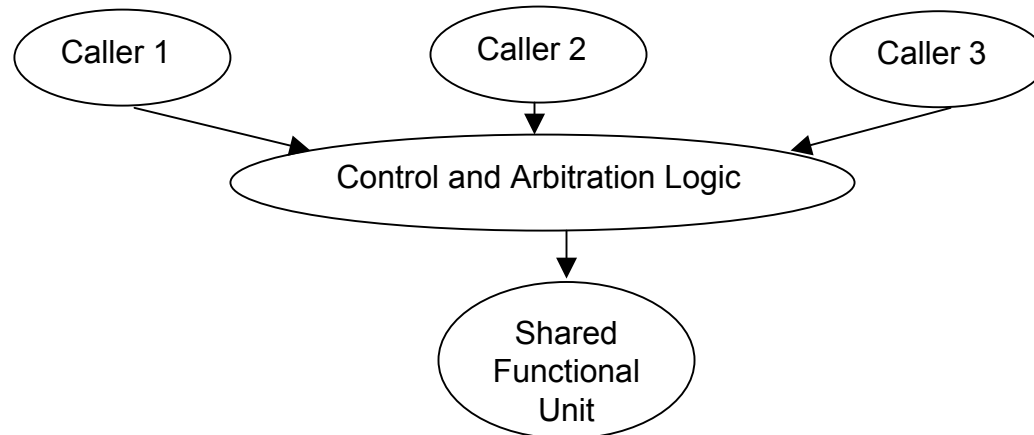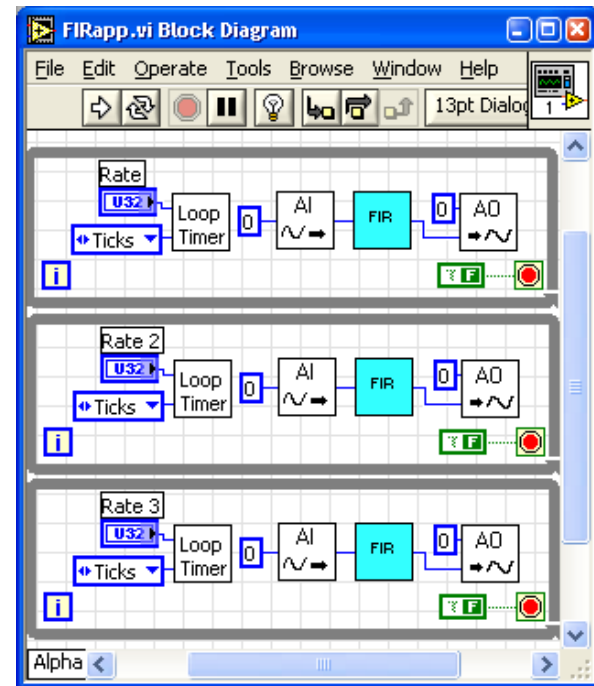
Newton Petersen

Martin Wojcik

Caller Prediction

- Predict caller of shared functional units
  - Dedicated hardware
  - Parallel execution
- Prefetch instance state data – Nothing new
- Build on branch prediction
- Mechanism built into dynamic scheduler

Models of Computation

- Prefetching can be easily done for static schedules

- Prediction helps when nodes must be dynamically scheduled
  - G (LabVIEW)
  - Process Networks
  - Dynamic Dataflow
  - Boolean Dataflow

Applications

- Not hard real time

- Mixed systems
  - Modem carrier recovery and modulation filters

- Varying quality of service
  - Video or audio playback
  - Data compression
  - Speech recognition

- Fast-settling dynamic schedules
  - Measurement Systems