IECAS visit

April 2014

COMET architecture
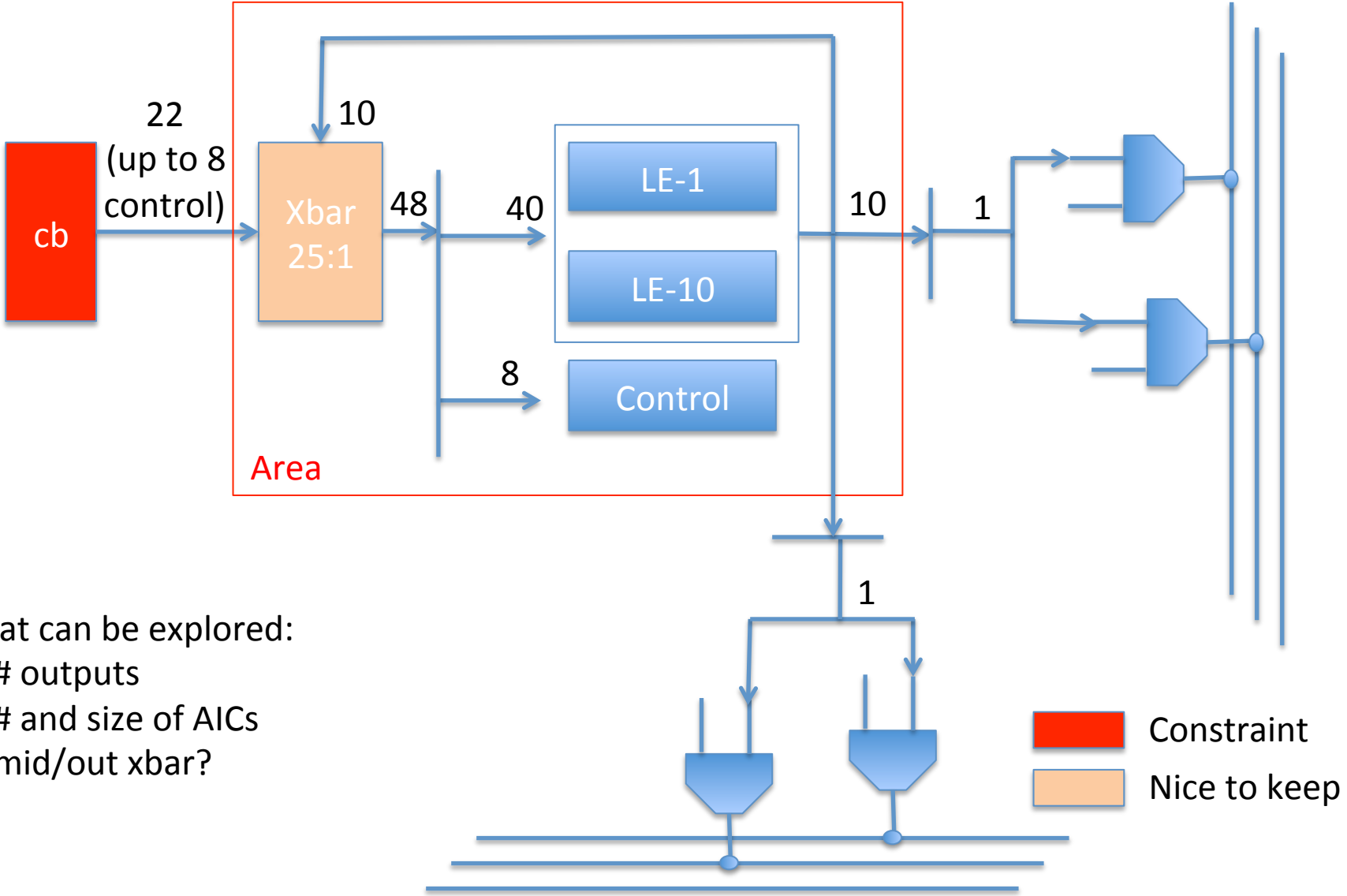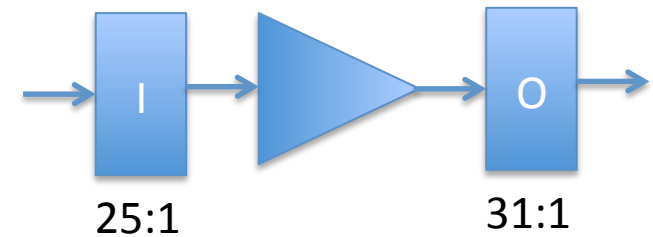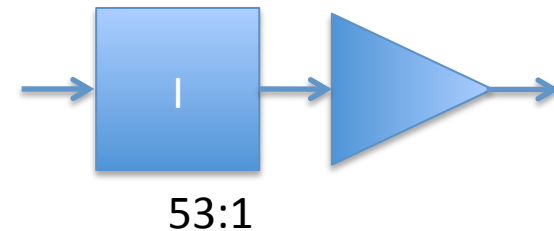
Possible AIC arch

- ## Option 1: with output xbar
  - AIC6 + 10 mux31 + 72 (+8 control) mux25

25:1 31:1

- ## Option 2: without output xbar
  - AIC6 + 72 mux53

53:1

Cut Generation

- Cut generation: heuristic elimination of the not so promising cuts (use cost function)
  - Parameters:
    - Number of cuts propagated
    - Max depth (need not to be the same as max AIC depth)
    - Max # inputs
    - Resynthesis flag (not implemented in the first version)
    - Cost function:
      - least priority to the cuts smaller than min AIC depth
      - min AIC depth
  - Testing:
    - make sure generated cuts are depth feasible and within #inp constraints.
  - Note:
    - keep in mind while designing the data struct the future resynth
    - keep in mind hybrid: need for 2 lists of cuts (LUTs and AICs) that will merge in a single one.
    - keep in mind that cost functions will change in the future -> as modular as possible

Cut Selection

- Similar to traditional (LUT) cut selection
- Will complicate with hybrid, widen the scope to enable good selections
- Test:
  - final cut selection <= any cut selection (in delay)

Output generation

- BLIF with AICs as BB (same old mapper)
  - Extend (with comment) to provide AIC configuration
- Internal reconstruction (AIG) for verification purposes (check that the circuit is equivalent to the input one).
- Parameters:
  - Flag for equivalence checking

Planning

- 1st cut generation: 1 month
  - Only cones
  - Cost function: depth + area flow (tie breaker)
- 1st cut selection: ~1 day
- 1st output generation: 2 weeks
  - Internal AIG reconstruction + BLIF w BBs + Mask
- 2nd output generation: 3 weeks
  - Equivalence check
- 1st extend to hybrid: 3 weeks
  - Include LUT cuts
- 2nd extend to hybrid: 2 weeks
  - Explore cut selection strategies

1st VPR
experiments
(only AICs)

Final
experiments
to freeze the arch

1st cut	1st out	2nd out	1st hybrid	2nd hyb
April	May		June	July