

# SLIP 2010 position statement: Forget about individualism, it's all about socialism

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#### Q1: How did SLIP's scope change?

1999 **Global interconnection** length mode

Placement optimization

Routability improvement

floorplanning

Manufacturing and yield

Technology extrapolations 3D and optical systems

n-chip power distribution

Often individual interconne often length led

> ay depends on longest path length -Also lot of routing problems (antenna effect, distance rules)

now

## Q2: missed opportunities for SLIP

- Tremendous drive to ESL design in EDA
  - from small number of connected blocks
  - to large number of parallel processing nodes

fits power law (Rentian) analysis!

- Don't forget: Rent's rule is a fundamental law (of physics/nature/...?)
- Opportunities in NoC research for large multicore networks (already started few years)
- Bring the « S » back in SLIP!

## Q3: Directions SLIP should shift to

- ESL
- ESL
- ESL
- Political statement: when using Rent's rule, embrace Obama's health reform plans...
- No more individual wire predicitions, only global statistics

#### Q4: 3-5 papers I'd like to see by 2020

- Statistical properties of parallel algorithms optimized for improved NoC performance
- Fast architecture exploration based on the bandwith (ESL) Rent exponent
- A quick safari through the interconnect-centric system-level design jungle
- Think globally, act locally: healthcare for everyone in the US

### Conclusions

- Rent's rule is a fundamental law of the interconnection nature
- Statistical properties only hold for large n
- Lots of areas need global estimates anyway
- Interconnect further increases to be the dominating factor in designing complex systems
- Need to move to higher abstraction levels (ESL and up)