draft-van-beijnum-multi6-isp-int-aggr-01

Provider-Internal Aggregation based on Geography to Support Multihoming in IPv6

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goals

- Enable multihoming in IPv6 as soon as possible. So:
  - No new code
  - No cooperation between networks
  - Intermediate term scalability, ultimately be replaced by long term solution
  - No support for very exceptional cases

how it works

- Distribute full global routing table over the different routers in a network rather than give each router a full copy

- Could be done without geography, but then "scenic routing"

- So in every router "local" more specifics + global aggregates

- This means addresses must be assigned geographically

provider internal

- Each (ISP) network generates aggregates for internal use

- Aggregates are ***NOT*** announced to other networks

interconnection

- Every network announces all customer routes to all its peers everywhere
- Every network gets to aggregate in a way that fits its topology
- Interconnection doesn't have to be in target area!
- Bad interconnection means bad aggregation, but still reachable

example
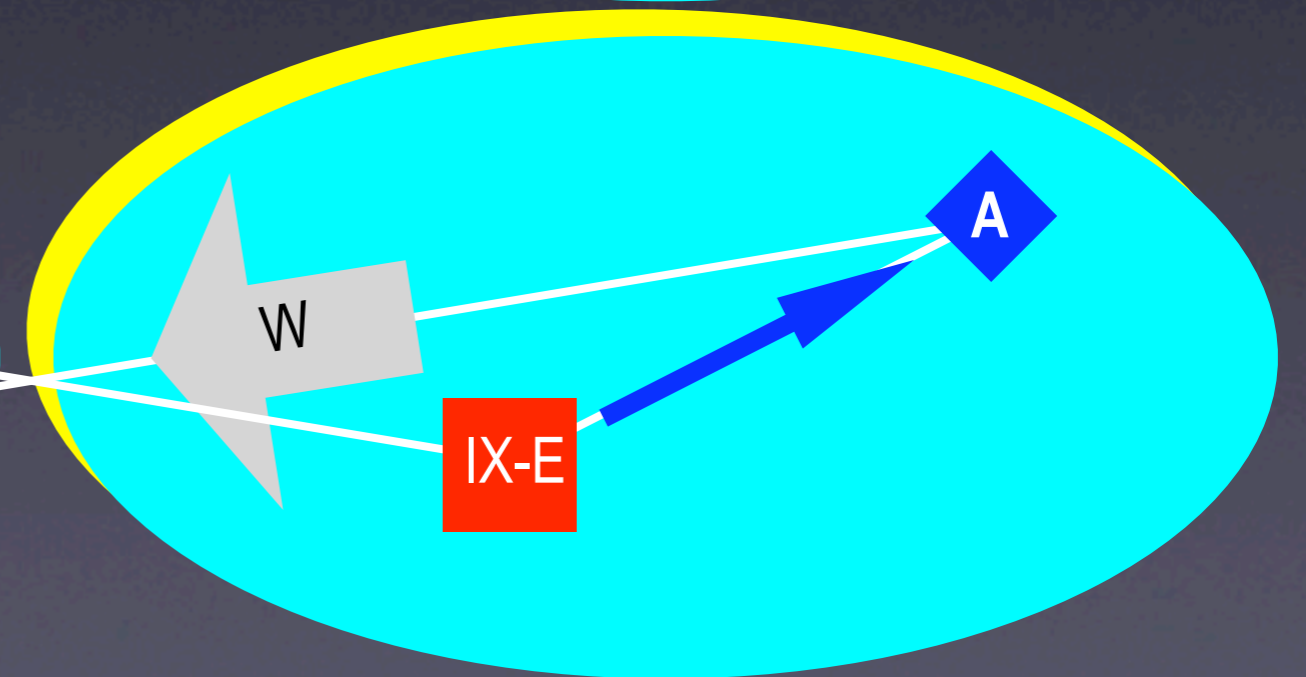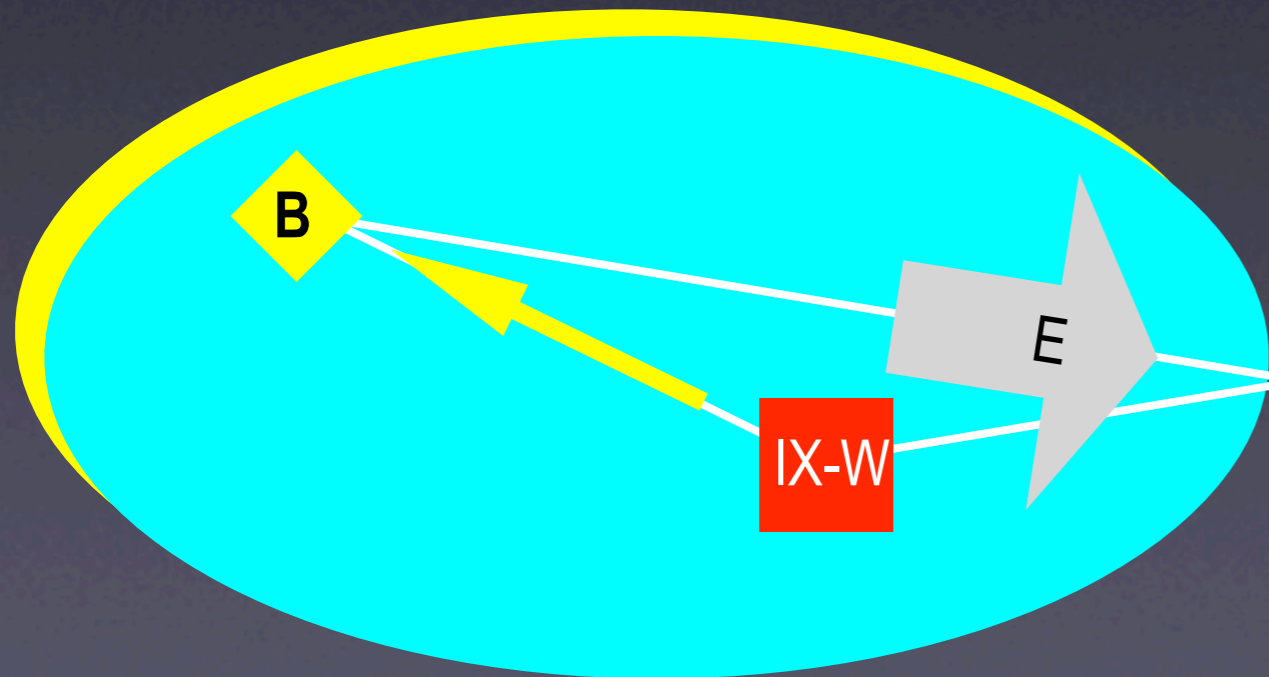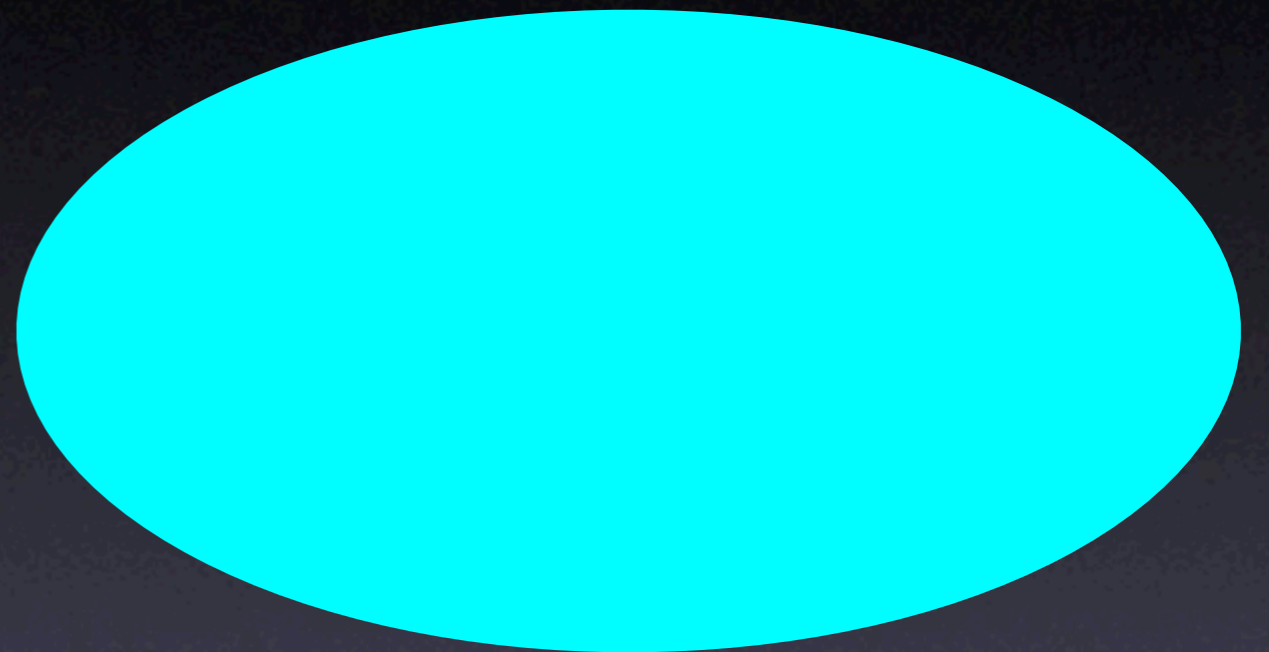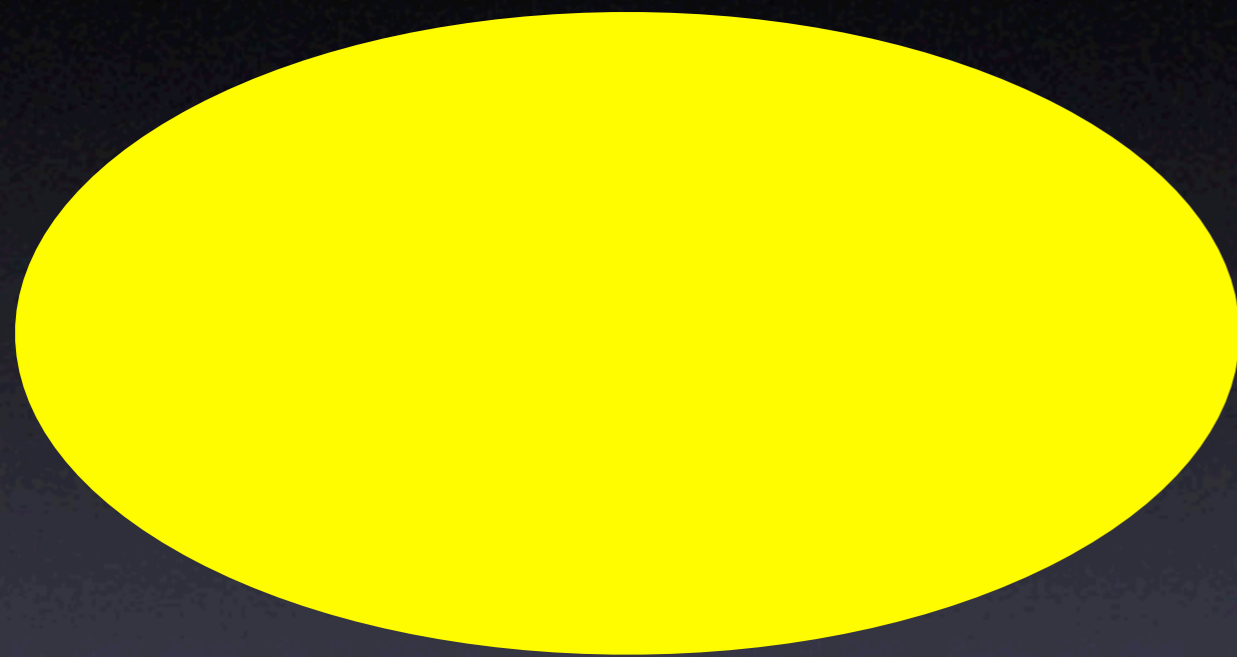
geo != topology

- Agreed. But:
    - Nothing will match topology for any length of time as it constantly changes
    - Correlation between geography and topology > 0
    - Even if the geo part doesn't work still *some* savings

very few downsides

- Only need geographical address assignment to start multihoming *immediately*

- Implement aggregation in each network independently when deemed desirable

- When we get locator/identifier separation geo addresses can be identifiers, automatically clean up routing table

questions?