RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Visualising the user to user Internet with RIPE Atlas

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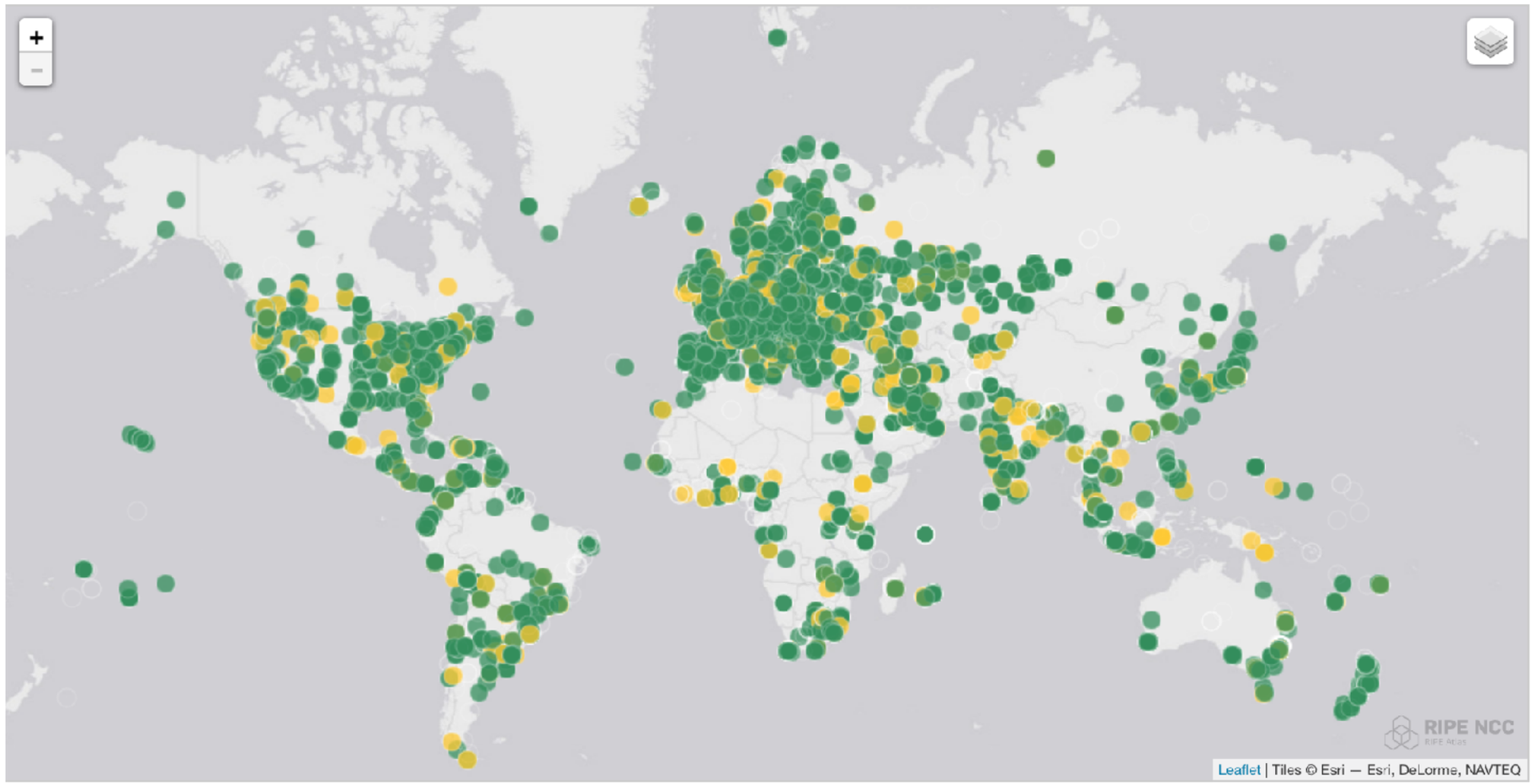
User to User is Still Important

- Traffic is mostly optimised for big content providers.
- But who is in the middle of user-to-user communications?
  - Any “single point of failure”?
  - How much IXPs and Transit Providers are involved?
- Can we estimate how many users are represented by the various player involved?

Ingredient (A): RIPE Atlas

- Measure the Internet!
  - By the community, for the community
- It's on Wikipedia: https://en.wikipedia.org/wiki/RIPE_Atlas



Ingredient (A): RIPE Atlas

10,400+ probes connected (310+ Anchors)

6000 results collected per second

40,000+ user-defined measurements weekly

Five types of user-defined measurements available to probe hosts and RIPE NCC members: ping, traceroute, DNS, SSL, NTP, HTTP, WiFi

Ingredients (B) + (C)

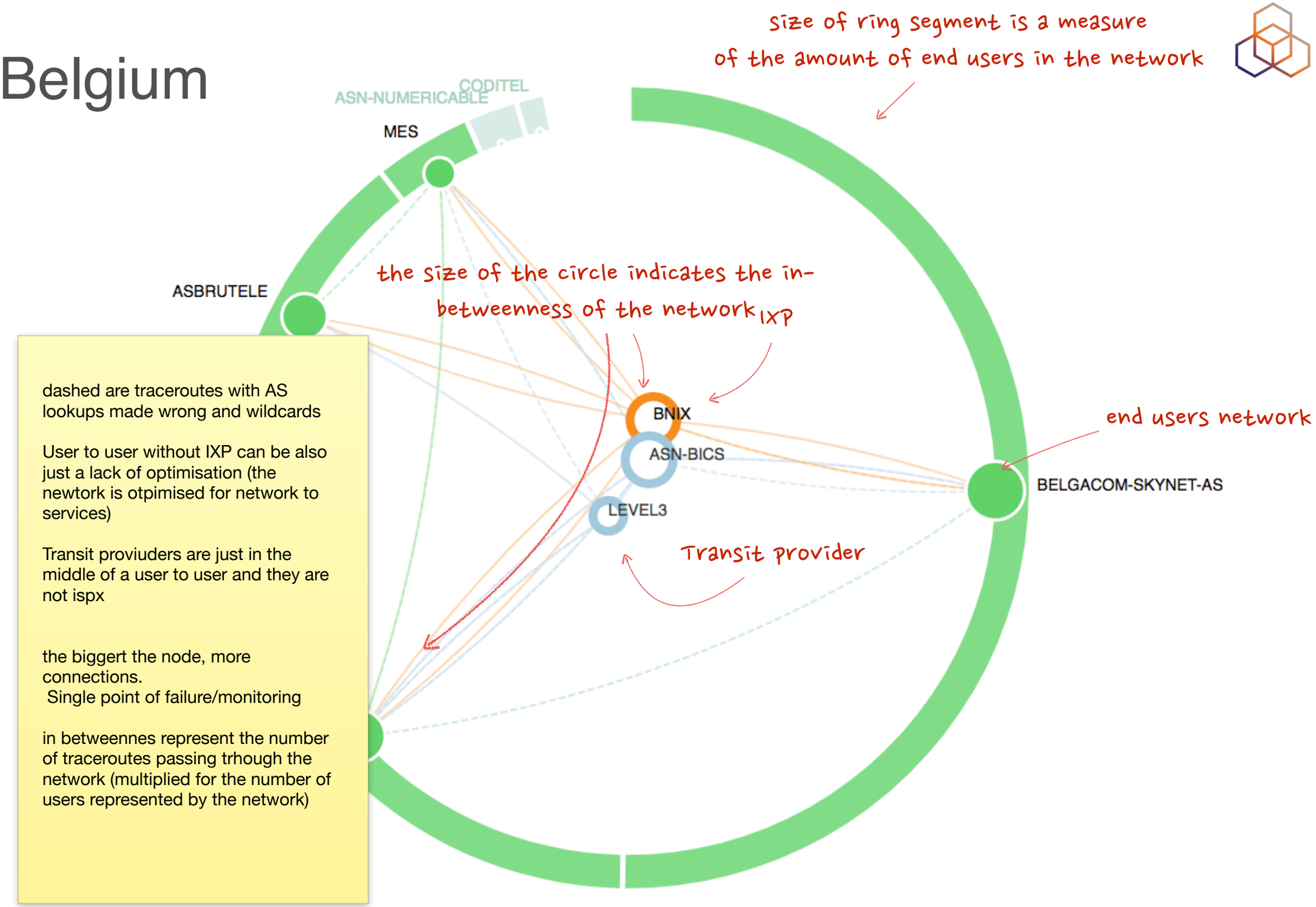
- (B) User population estimates (APNIC data)
  - measurement-based rough estimate
  - https://stats.labs.apnic.net/aspop/
- (C) IXP-country-jedi
  - https://www.ripe.net/ixp-country-jedi/
  - mesh traceroutes between RIPE Atlas probes in a country
  - measures and analyses (using OpenIPmap)
- Many caveats: Results are ‘sketches’

population per network(ASN)

we consider only network that have at least 1% of the population

Show me the Data!

Belgium



dashed are traceroutes with AS lookups made wrong and wildcards

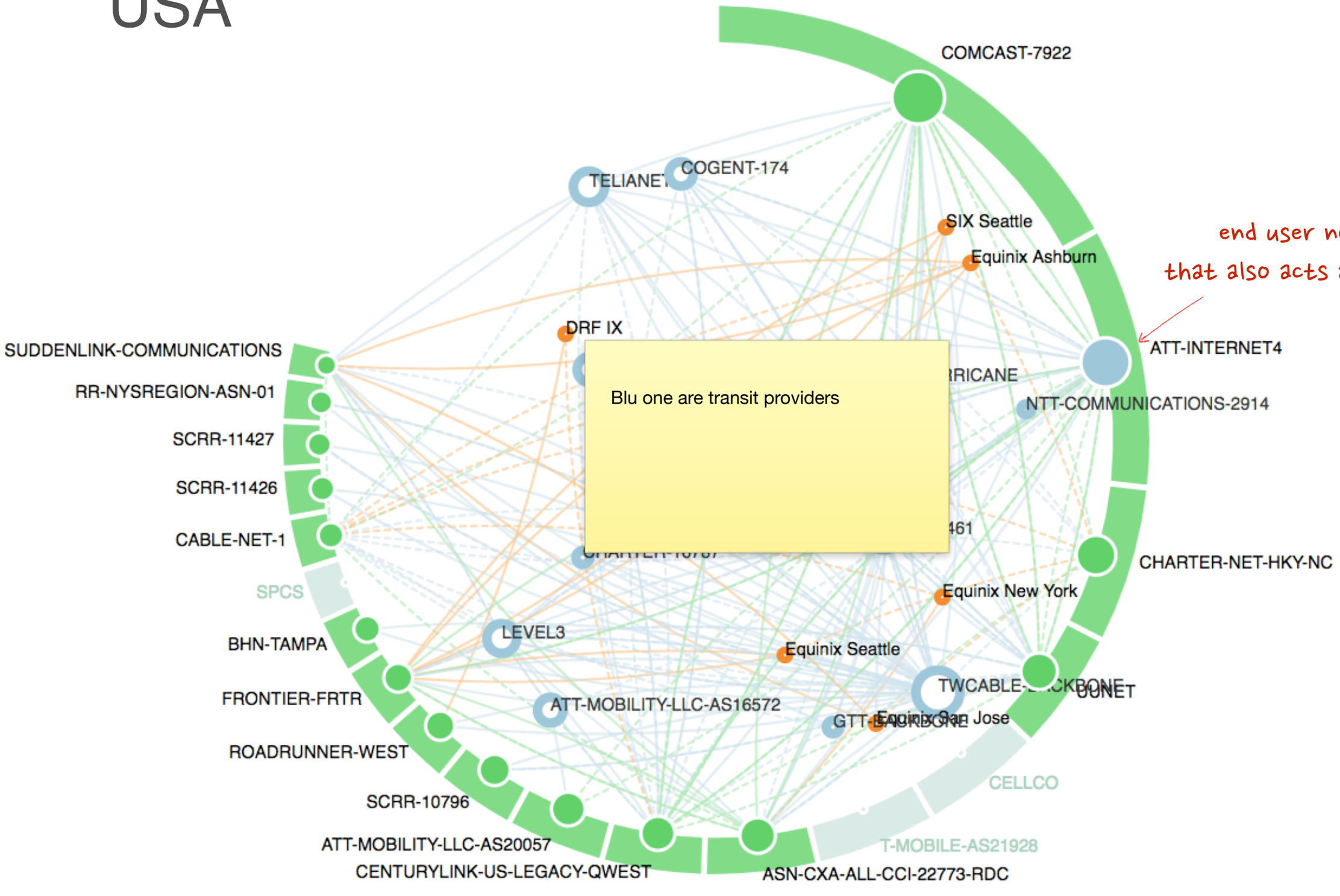
User to user without IXP can be also just a lack of optimisation (the newtork is otpimised for network to services)

Transit proviuders are just in the middle of a user to user and they are not ispx

the biggert the node, more connections.
Single point of failure/monitoring

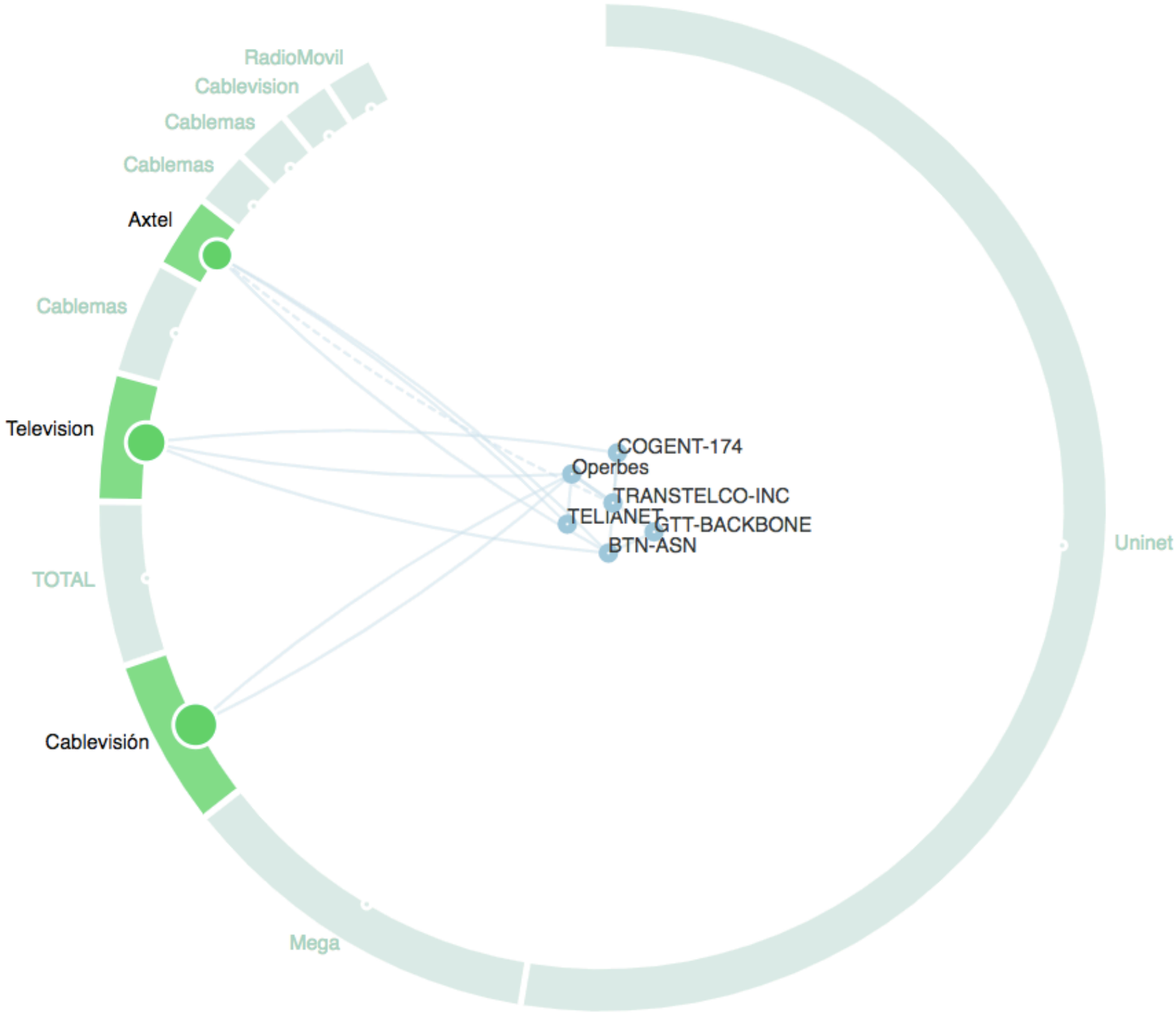
in betweennes represent the number of traceroutes passing trhough the network (multiplied for the number of users represented by the network)

USA



end user network
that also acts as a transit

Mexico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Axtel
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Television
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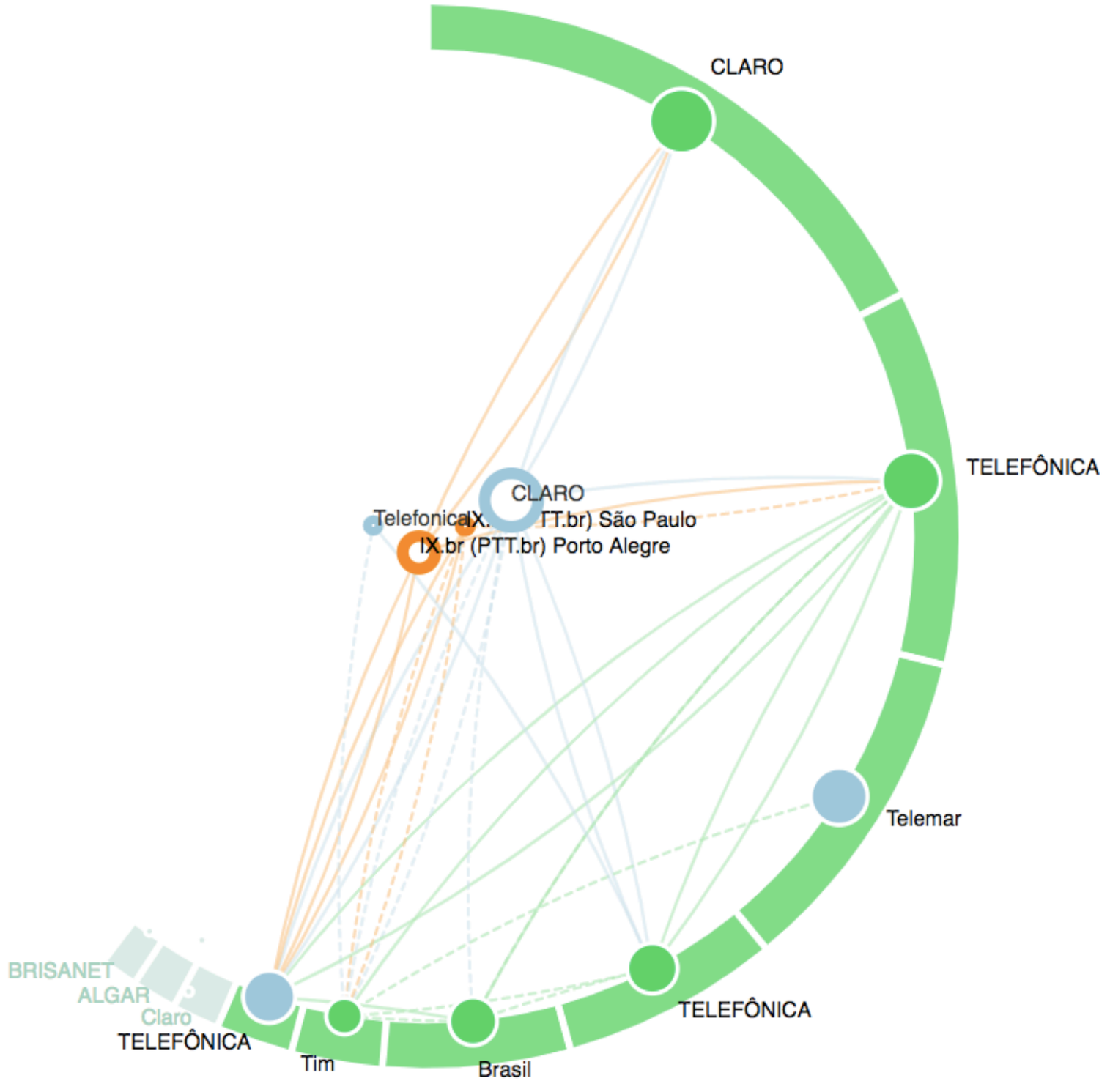
Mega
Uninet
COGENT-174
Operbes
TRANSTELCO-INC
TELIANET
GTT-BACKBONE
BTN-ASN

Brazil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Can we measure how (de)centralised Internet is with RIPE Atlas?

Yes! We can create sketches of what infrastructure is between users

References and Feedback

- RIPE Atlas
  - https://atlas.ripe.net
- IXP Country Jedi
  - https://www.ripe.net/ixp-country-jedi/
  - http://sg-pub.ripe.net/ixp-country-jedi/XX/2018/01/01/

Your country code here!!

- RIPE Labs
  - https://labs.ripe.net

Questions and feedback during LACNIC 29

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Questions