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Open Exchanges

LHCONE at NetherLight

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Current status 1/3

- CERN, USLHCnet and NetherLight's **LHCONE implementation is already active**
 - Shared VLAN
 - Route servers at CERN and MANLAN
 - Trans-Atlantic connectivity
 - USLHCnet, other GLIF links
- 100G Amsterdam – Geneva
 - Implemented soon



Current status 2/3

- Combination of two European prototypes:
 - **Open Exchanges** and **GÉANT** as an **aggregation network**
 - Agreed on in Paris
 - LHCONE connection of GÉANT at NetherLight being implemented

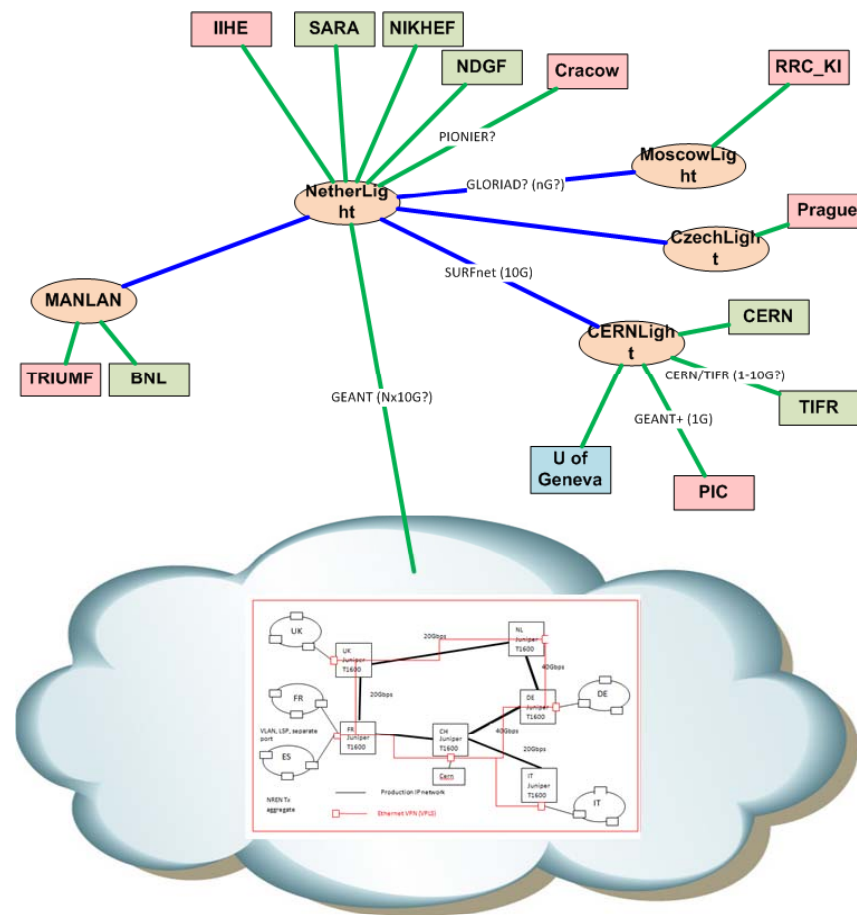


Current status 3/3

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Upcoming LHCONE connectors at NetherLight:

- NorthernLight, NDGF, PSNC, CzechLight, ASGC, NL-T1
- GÉANT as European aggregation network



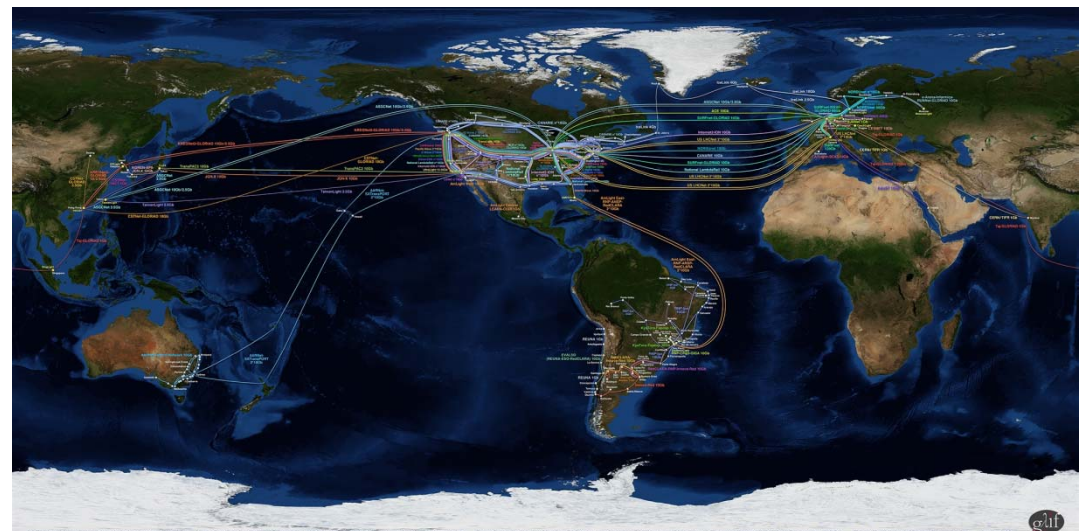
SURFnet. We make innovation work



GOLEs



- GLIF, the Global Lambda Integrated Facility, is an international virtual organization that promotes the paradigm of lambda networking. [www.glif.is]
- **GOLE: GLIF Open Lightpath Exchange**
- Currently 18 GOLEs around the globe





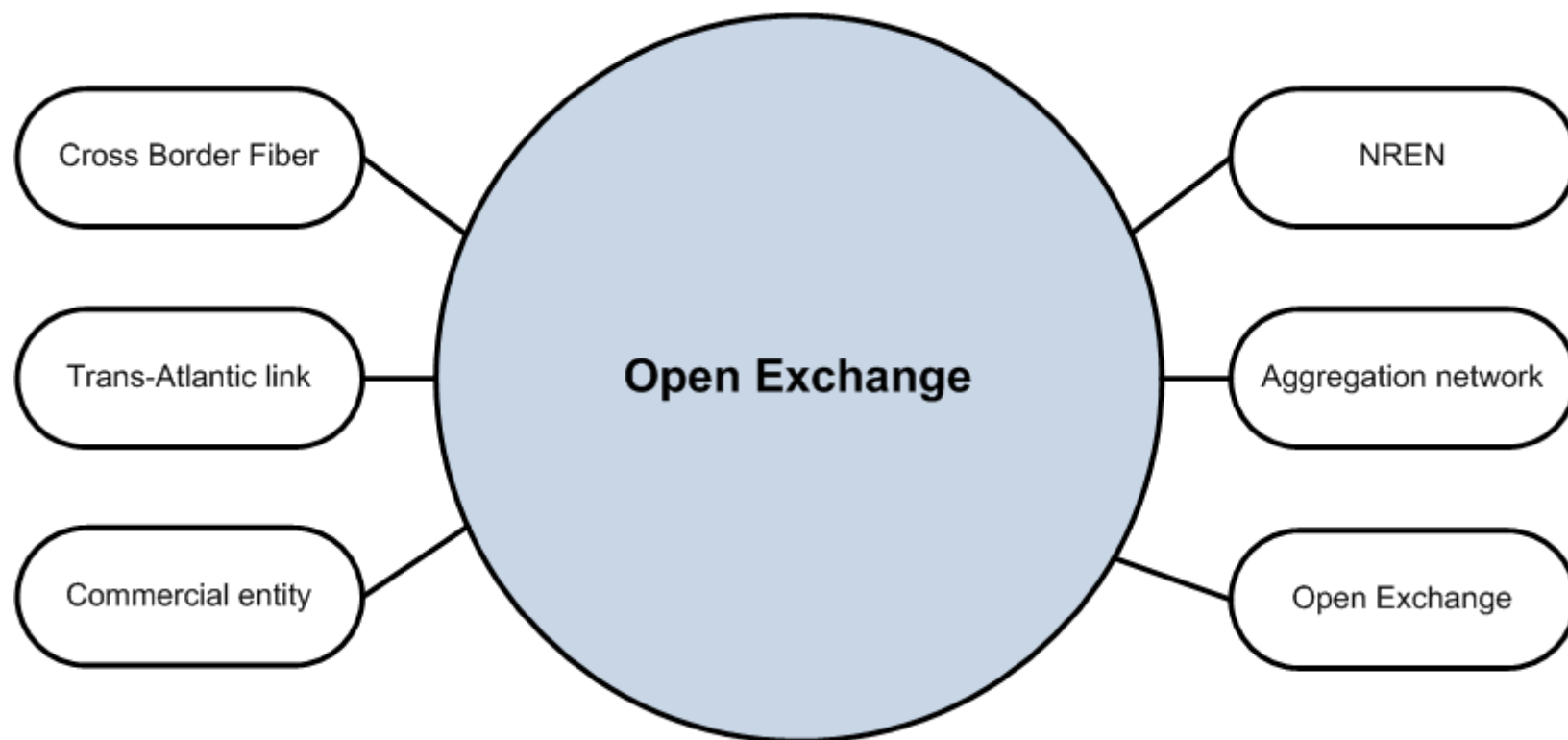
Open Exchanges

- **“Policy is open” and will remain open**
- **Transit allowed**
- Anyone can bring in links
 - e.g. Cross Border Fiber
- Open Exchanges allow for innovative and independent architectures
- Open Exchanges enable heterogenous networks, tiers and end-users to cooperate (via LHCONe)



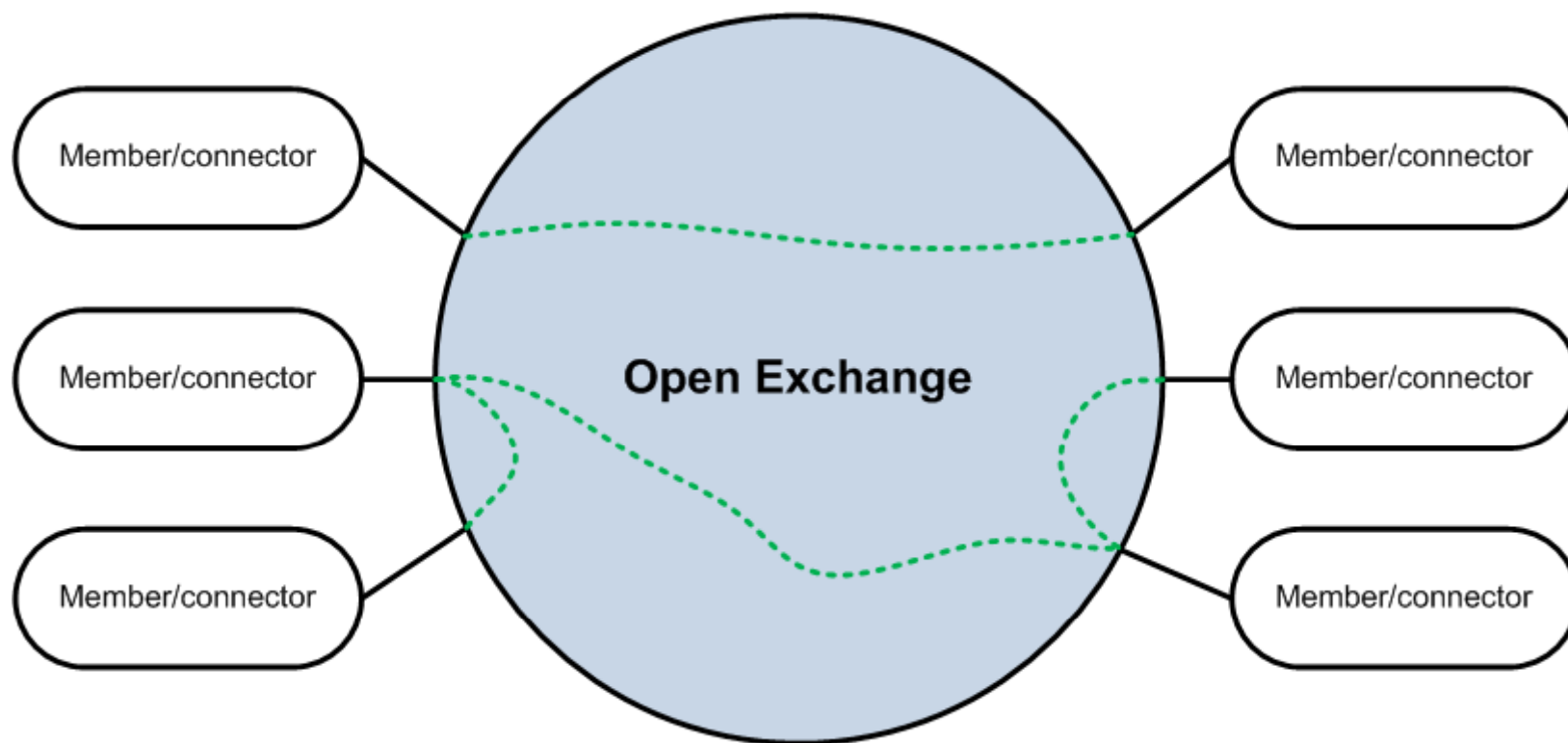
Members/connectors

- Anyone may become a member/connector of an Open Exchange (not necessarily for free)
- Links may be connected to the Open Exchange



Policy is open

- **All members are allowed to exchange any kind of traffic through the Open Exchange**
- There's no policy inside the Open Exchange preventing any destination or kind of data

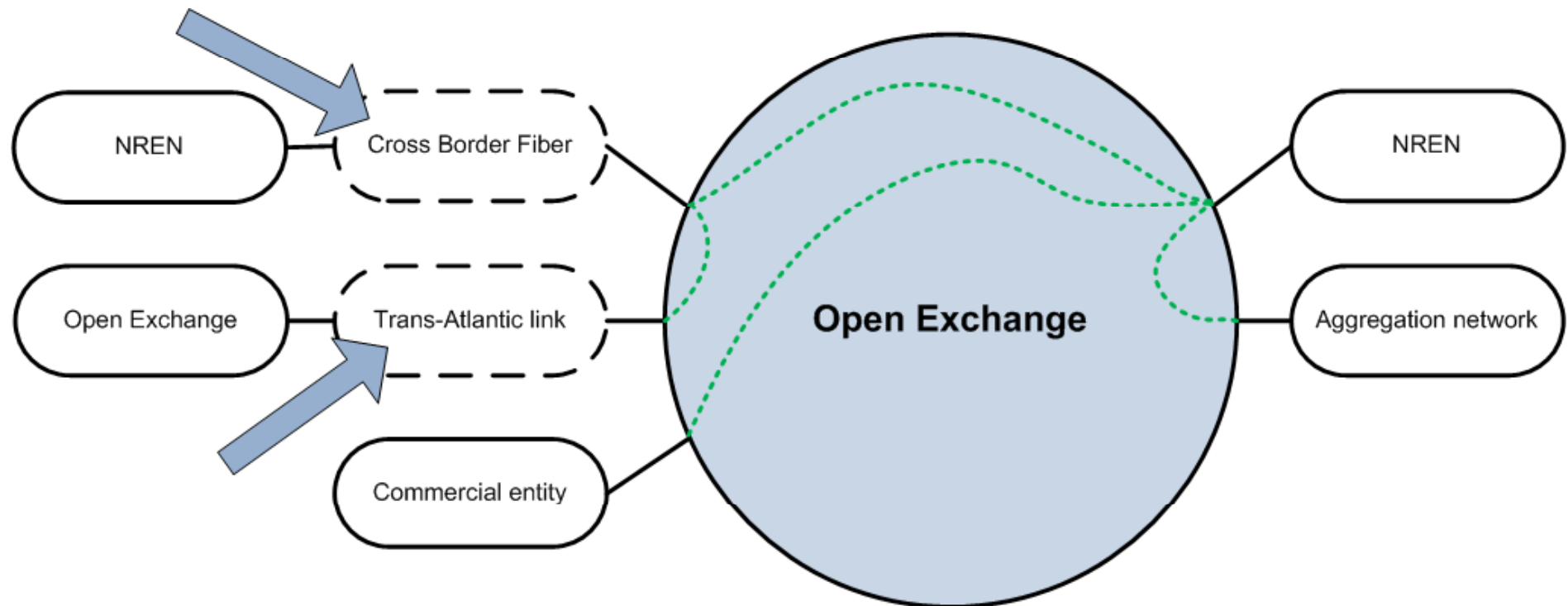




Links

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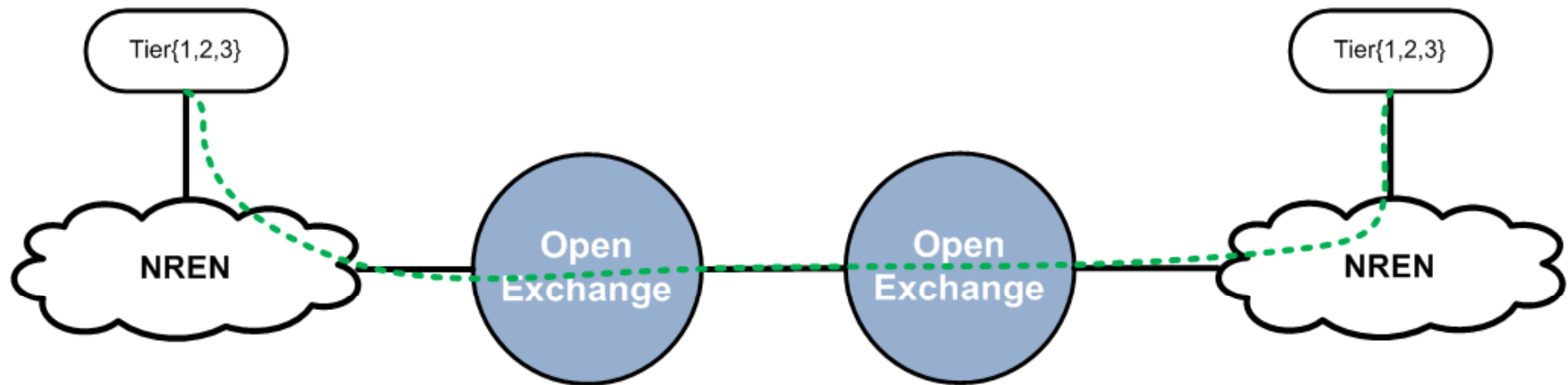
- **Anyone may connect a link to the Open Exchange**
- These links do cost money!
- Links can have a restricted purpose, e.g. 'LHC traffic only'





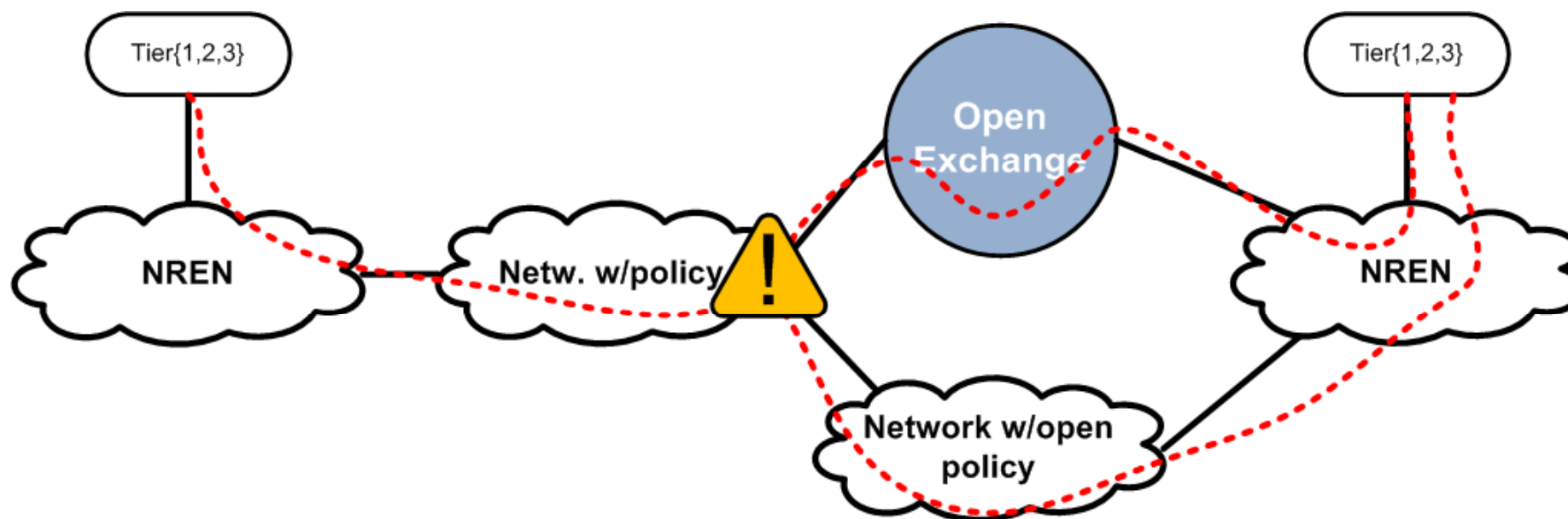
Transit

- Open Exchanges do not have policies that restrict/disallow transit



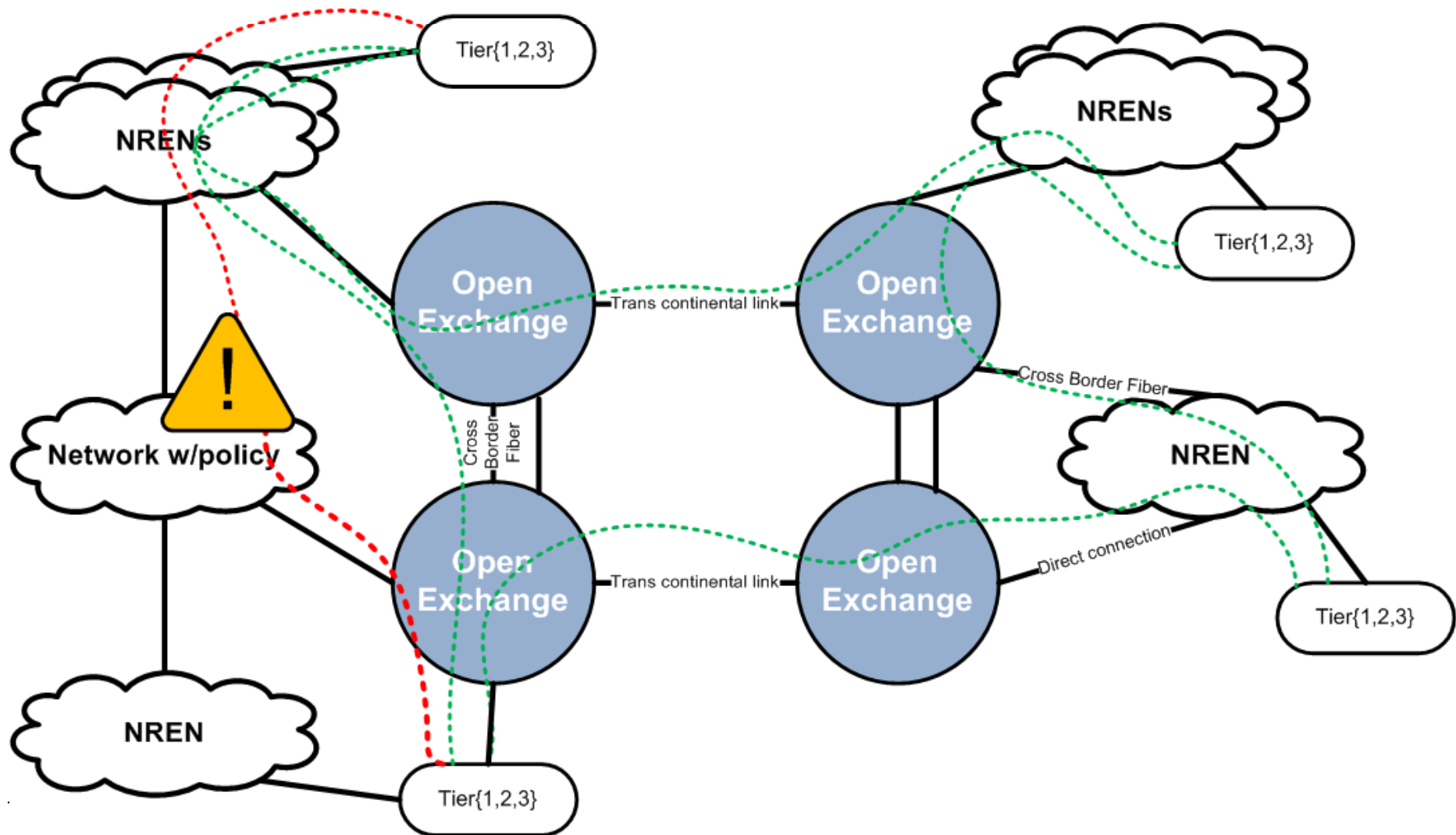
Transit policies

- Policies within a network or aggregator preventing collaboration





"All together now"



Thank you!



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