



GOLE Update

29 September 2015

15th Annual GLIF

Prague, Czech Republic

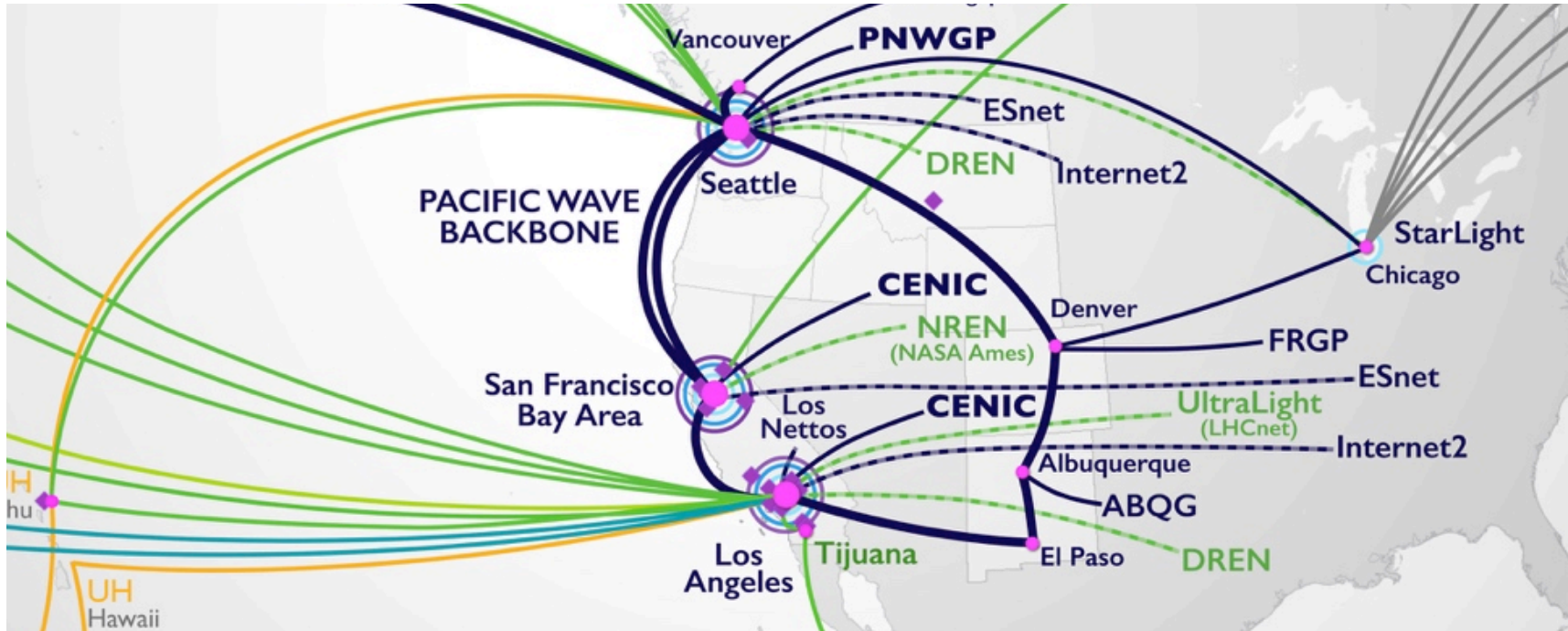
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CENIC



Pacific Wave is more than a GOLE

- It is/was 3 GOLE's
 - Los Angeles, Sunnyvale, Seattle
- A “Distributed Exchange”
 - Interconnections and GOLEs operated under a single domain/operations
- Collaboration of CENIC and PNWGP



■ Western Region R&E Exchange Points

- PW has exchange points in the Western United States at Seattle, SF Bay Area (Sunnyvale), Los Angeles, Denver, Albuquerque and El Paso
- Includes a diverse ring fabric to allow participating networks to peer across that fabric with any other participant

■ 22 major R&E networks directly connect to the Pacific Wave fabric

CENIC/Pacific Wave NSF Award

- Pacific Wave Expansion Supporting SDX & Experimentation (ACI-1451050, September 2015)
 - Continued enhancement, upgrade and evolution of Pacific Wave to support more 100G connections
 - Additional 100G capacity between exchanges points along West Coast
 - SDN/SDX deployment on parallel infrastructure to enable experimentation while maintaining production use of the Pacific Wave exchange
 - Collaboration with other IRNC awardees on SDX development, measurement and monitoring.



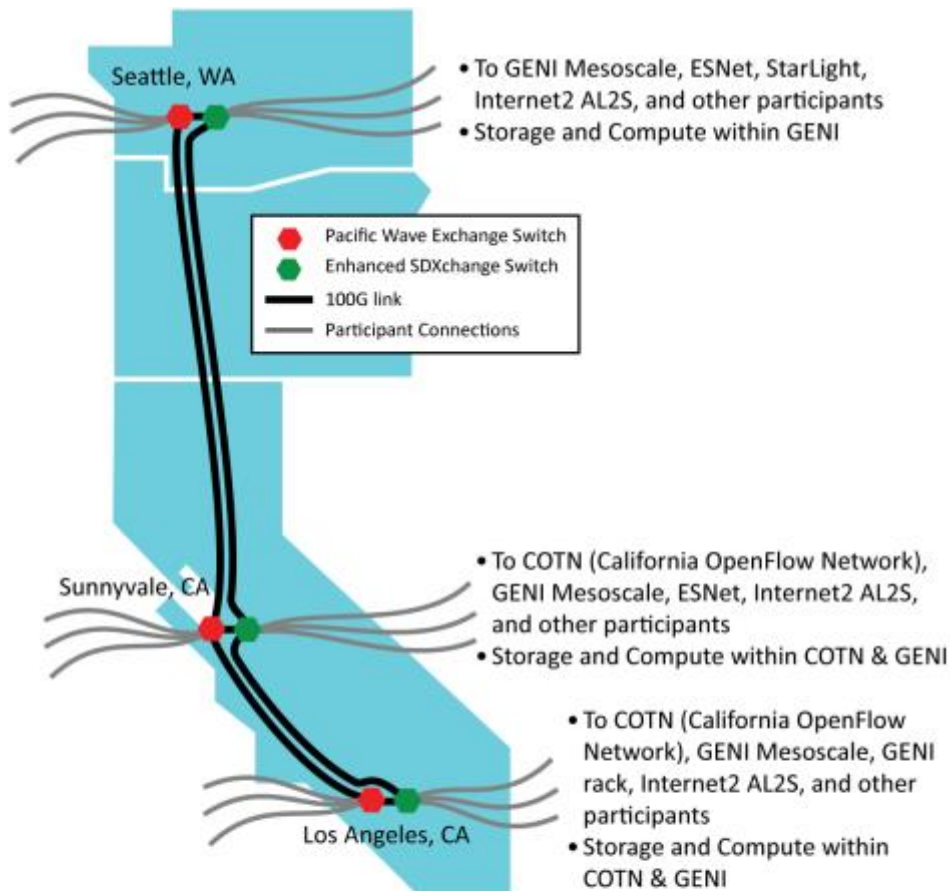
perfSONAR

■ 100G perfSONAR

- Seattle, Los Angeles in year 1
- Sunnyvale, Denver, Chicago in year ?

■ 10G perfSONAR

- Seattle, Sunnyvale, Los Angeles in year 1
- Denver, Chicago, El Paso in year ?
- May be allocated to private VLANs
- Considering availability on SDX platform

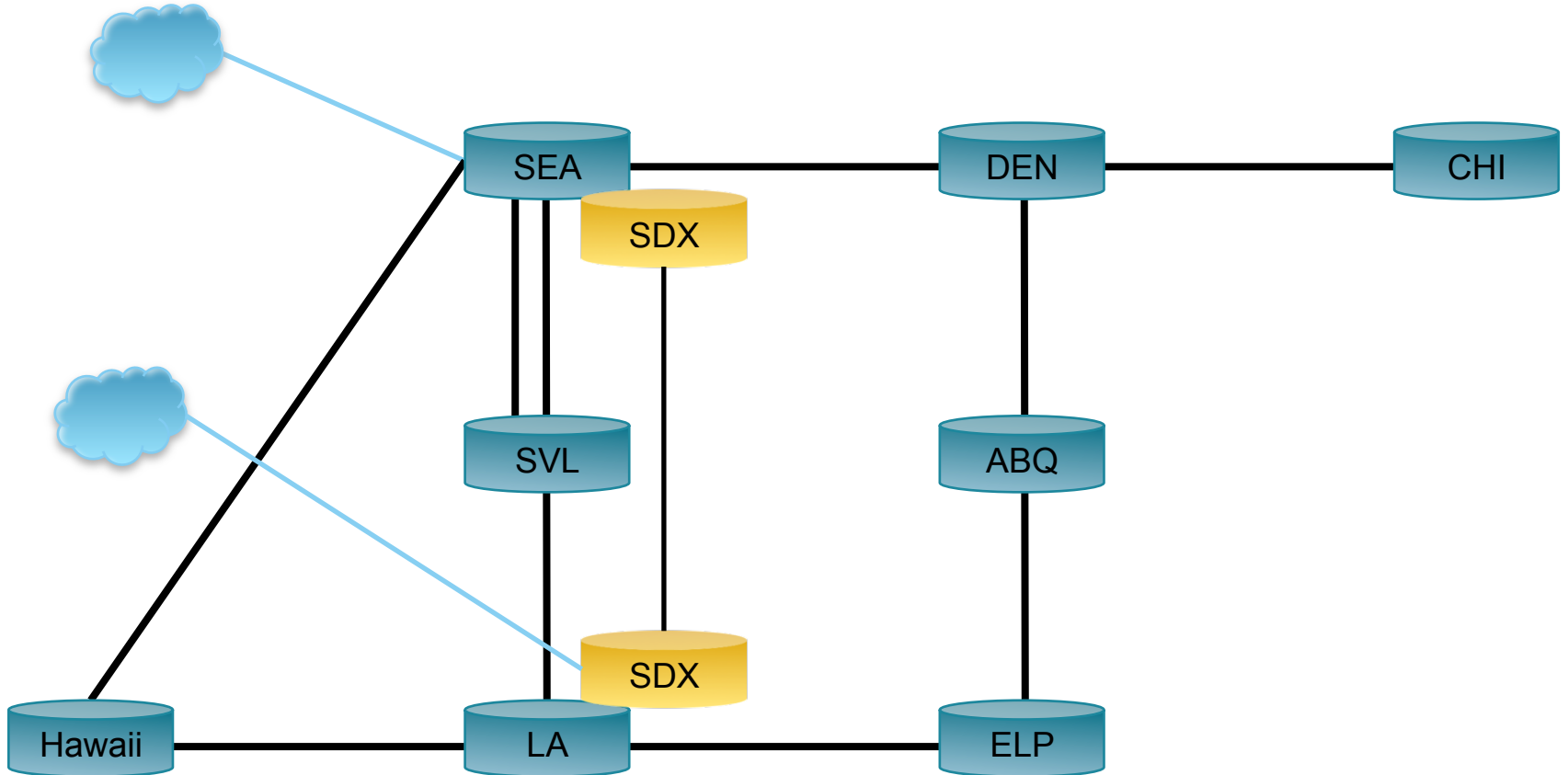


Traditional Peerings between all Pacific Wave participants can remain on the Pacific Wave Exchange Switches.

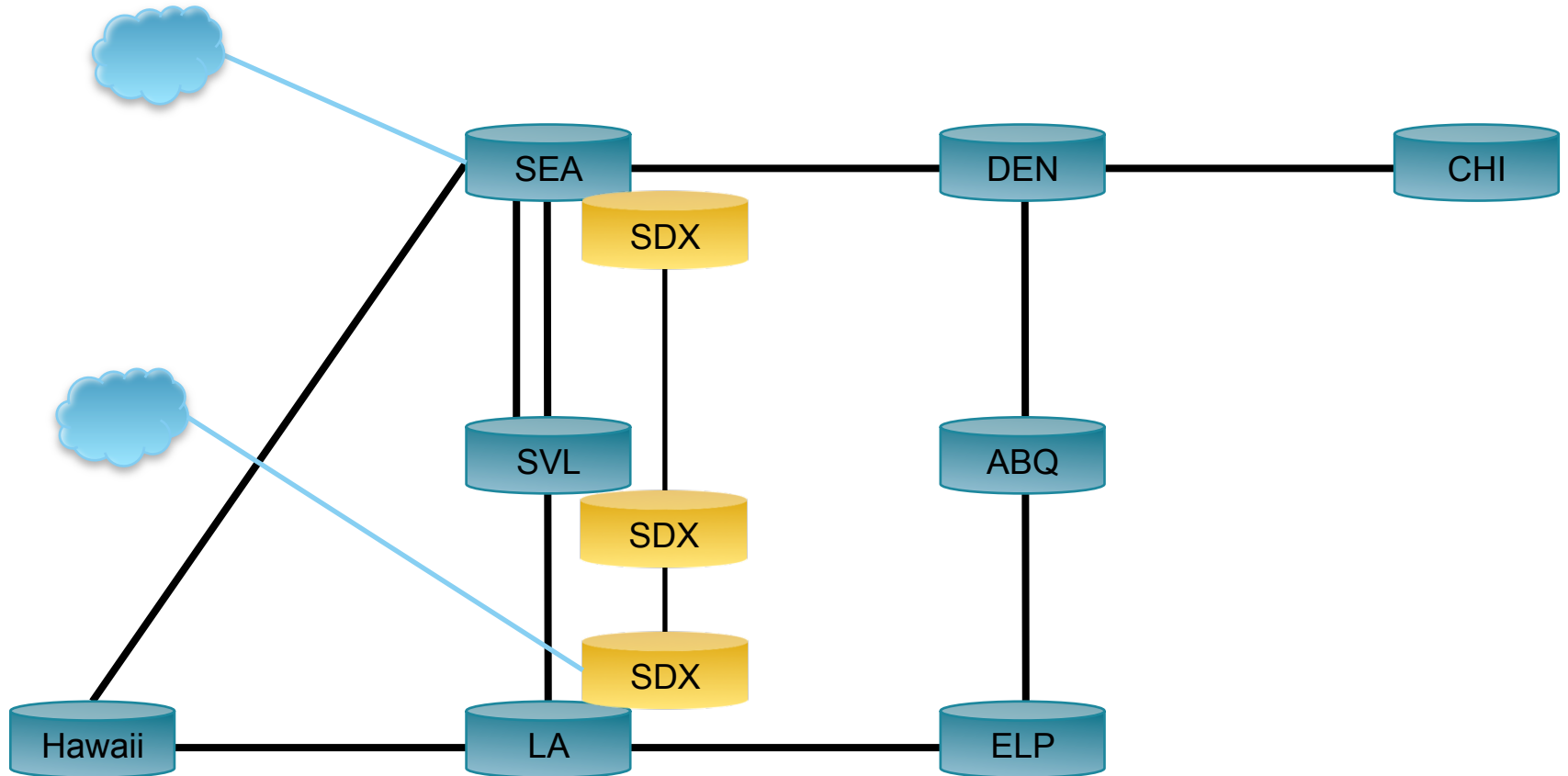
SDX Services can be accessed via direct connection to Enhanced SDXchange Switches *OR* via connections to the Pacific Wave Exchange Switches.

Mixed connections can also take place between participants where one is connected to the Pacific Wave Exchange Switch and the other to an Enhanced SDXchange Switch.

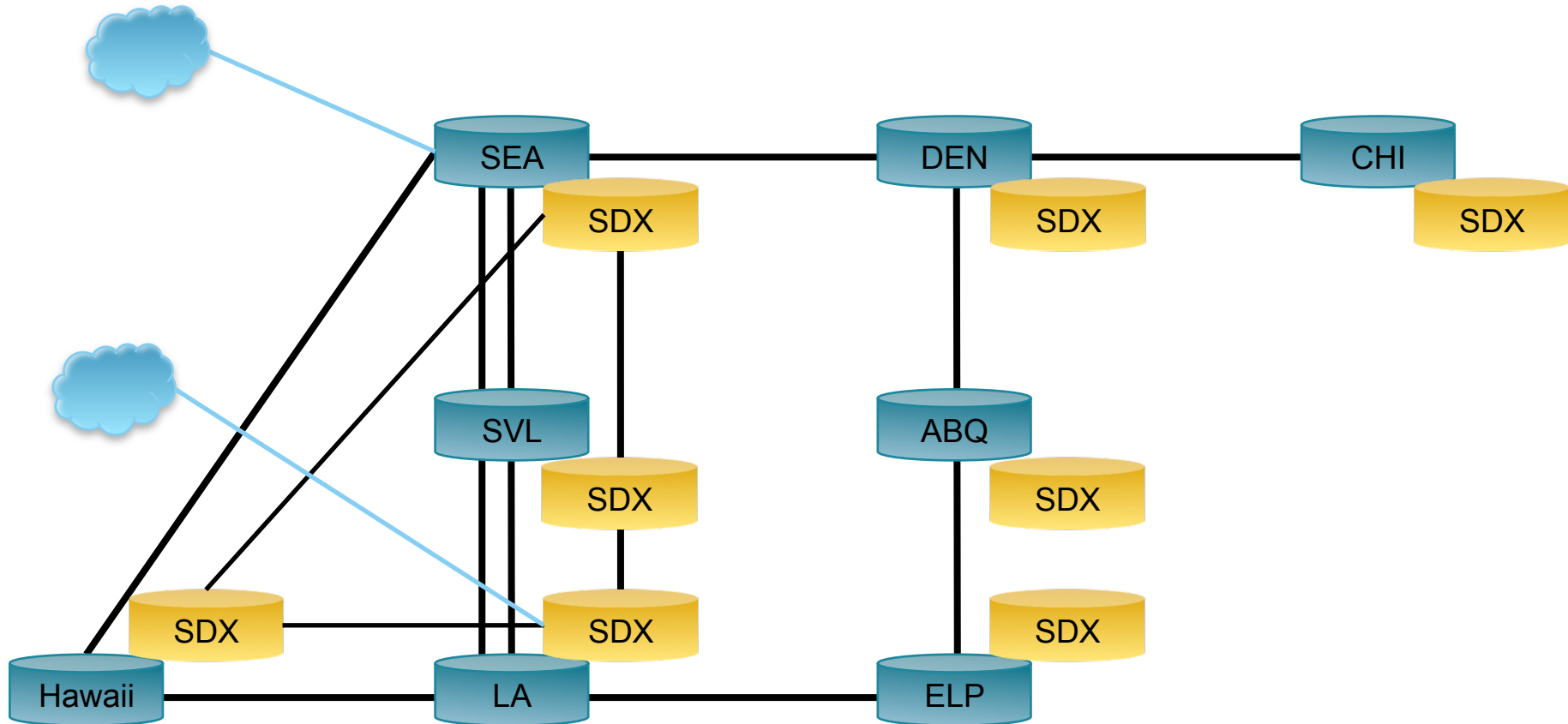
Pacific Wave SDX – Year One



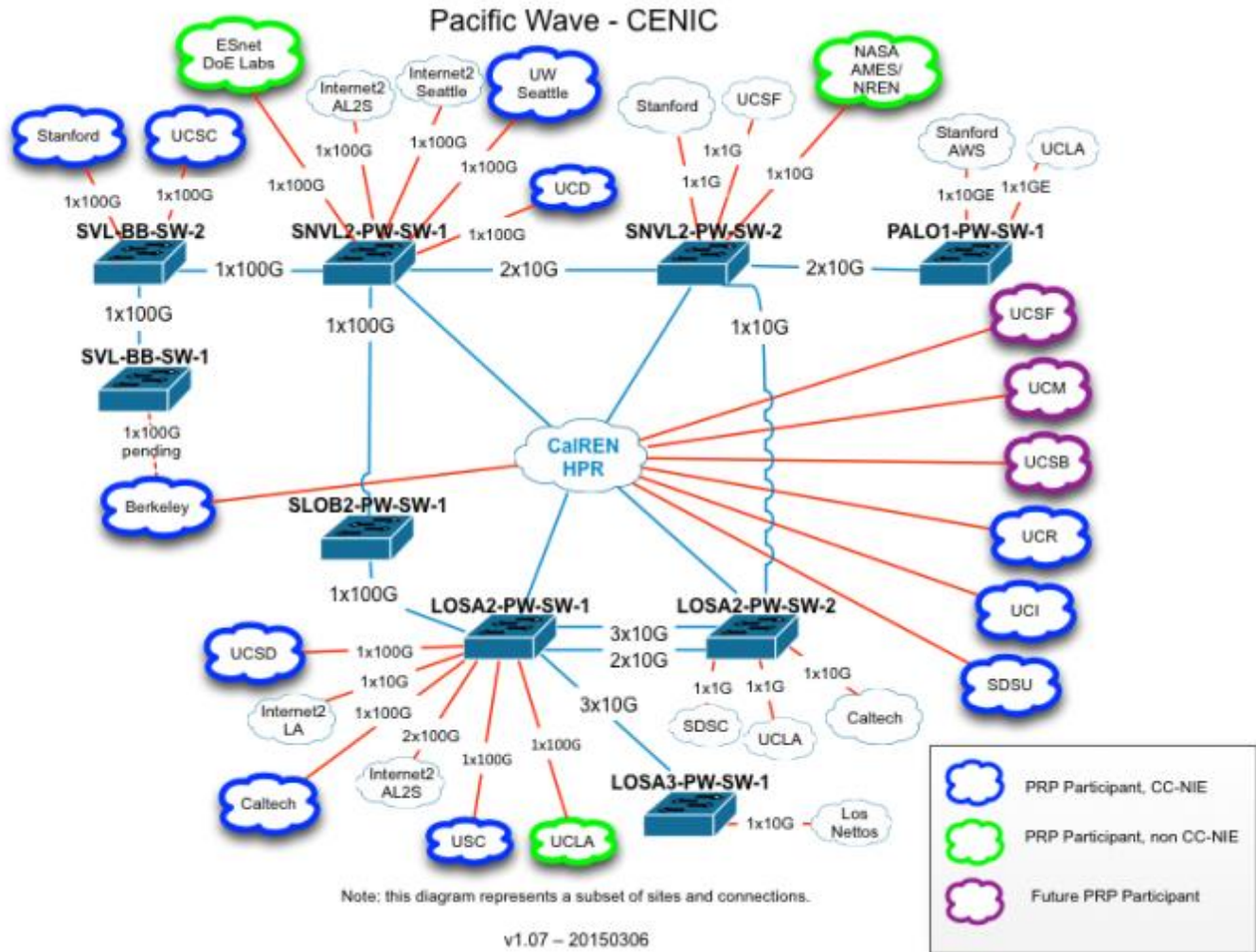
Pacific Wave SDX – Year Two



Pacific Wave SDX – Year ??



CENIC/Pacific Wave Network supporting PRP prototype demo





PACIFIC WAVE

Thank you!

CENIC

