



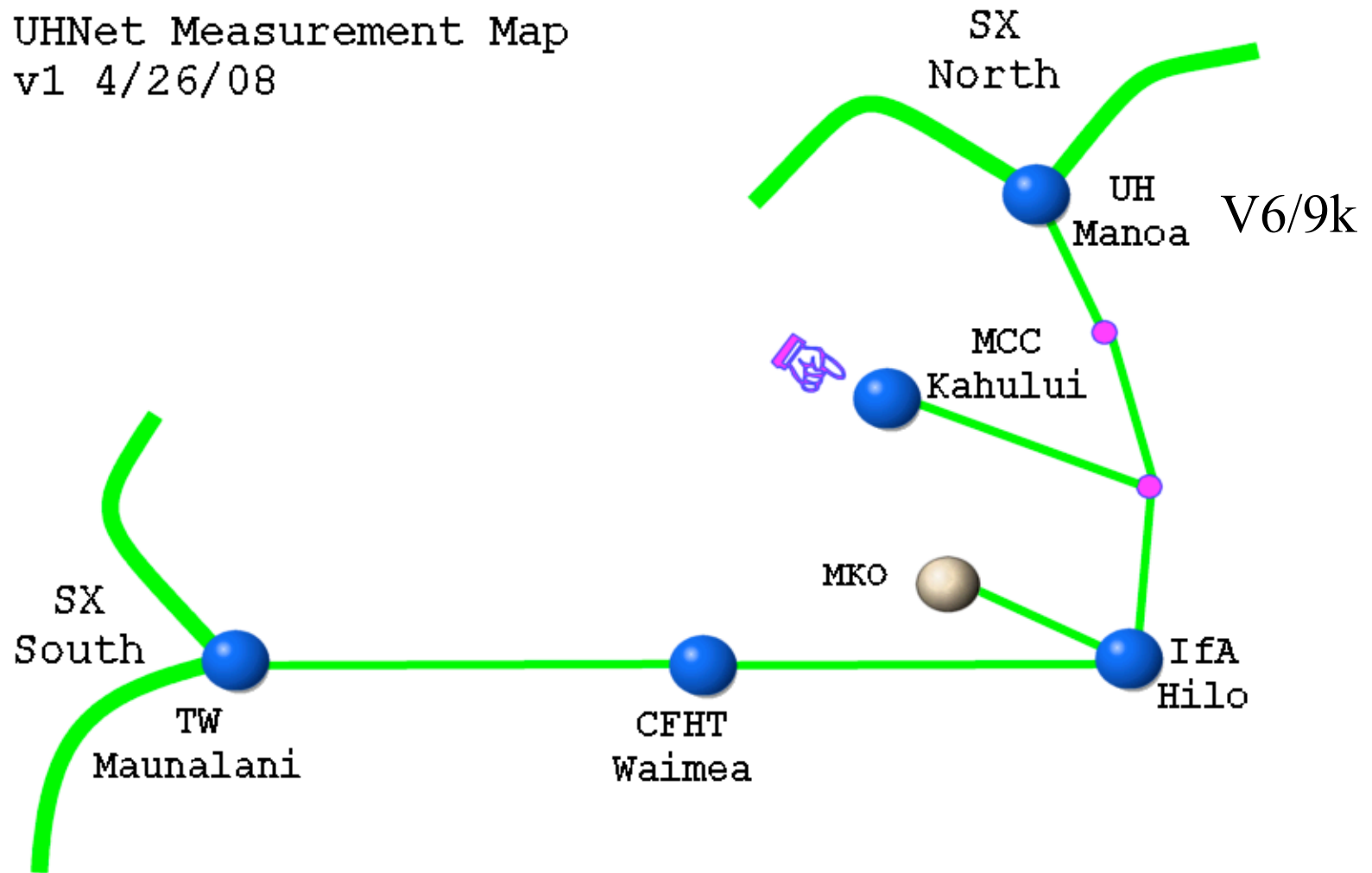
SXT/TLPW Instrumentation

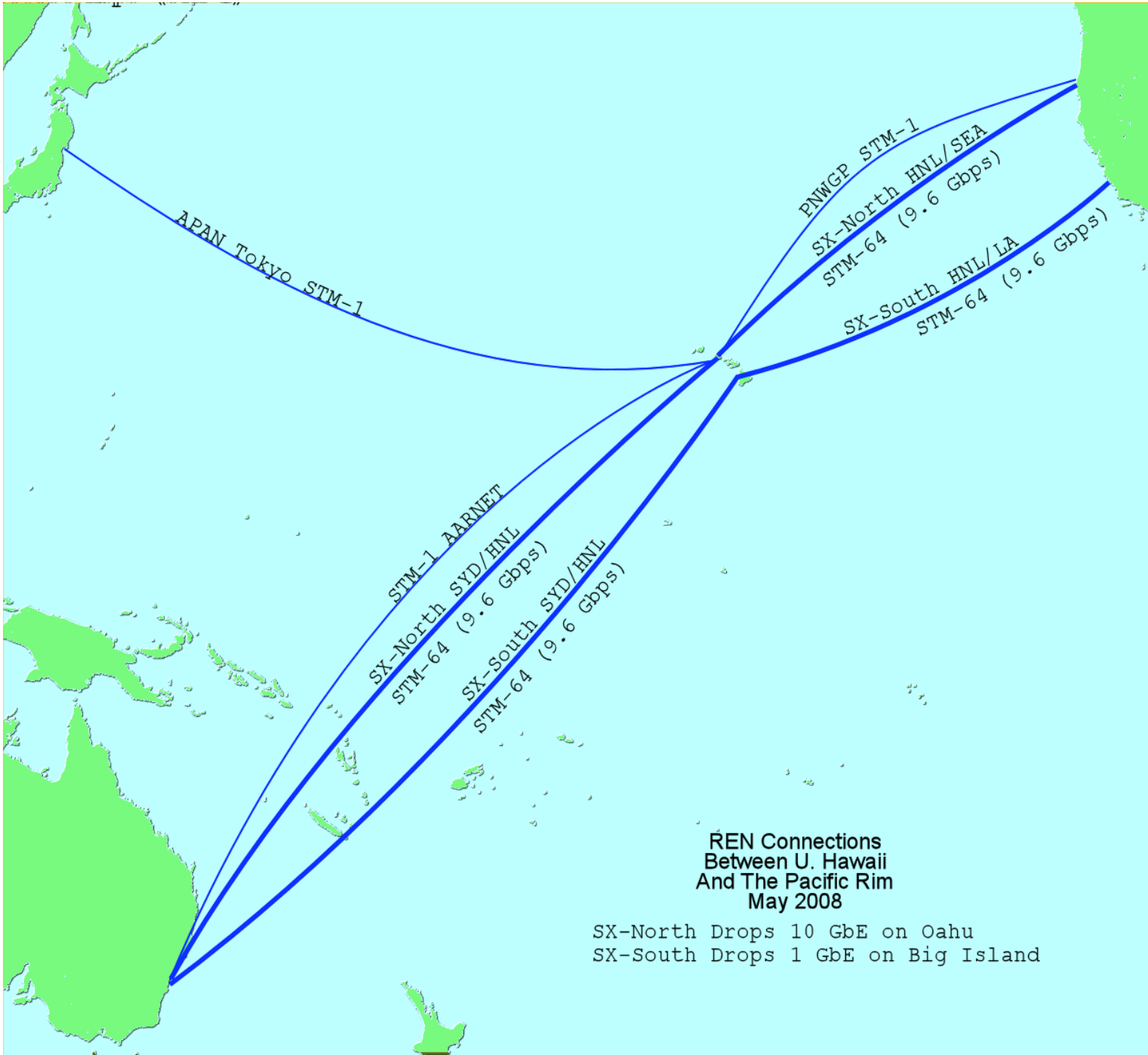
U. Nebraska JTW

July 21, 2008

UHNet Services

UHNet Measurement Map
v1 4/26/08





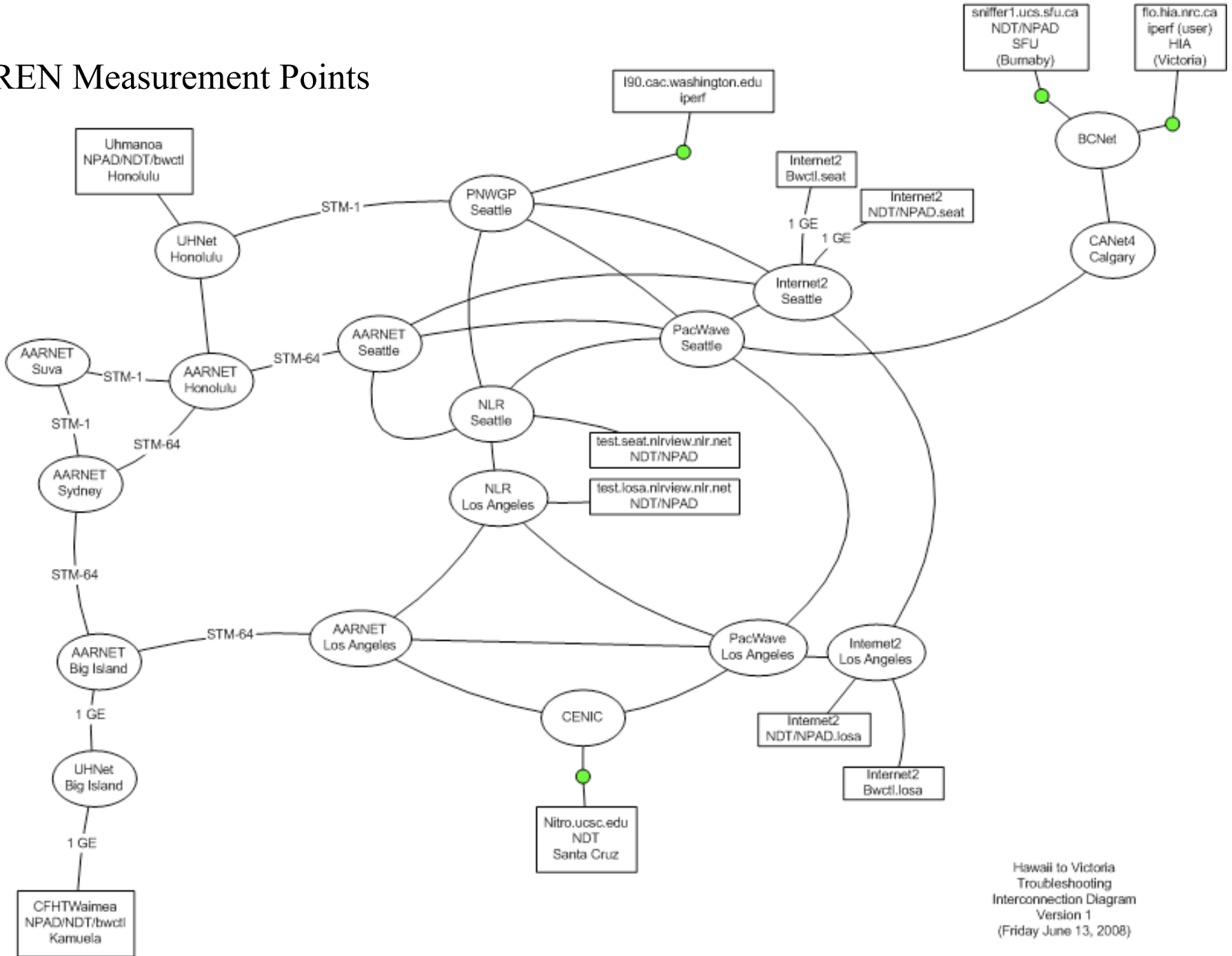
**REN Connections
Between U. Hawaii
And The Pacific Rim
May 2008**

SX-North Drops 10 GbE on Oahu
SX-South Drops 1 GbE on Big Island

Neighbors

- NLR has numerous NDT/NPAD points
- Internet2 has numerous bwctl/owamp/ndt/npad points
- UW has an iperf box
- CENIC/UC's have various
- Would like to see more in Australia
- APAN has bwctl services
- GEANT/DANTE never responds to key requests
- DREN has DAMPs which are not open

REN Measurement Points



What works

- NPAD
 - Most effective troubleshooting for limited length
- NDT
 - User friendly, sort of.
- iperf/bwctl
 - Long tests/big tests/UDP tests
 - (bwctl) scheduling and brokerage

What works

- owamp or smokeping – trending, and a perspective that one doesn't get with throughput tools.
- Implementing lots of test points, even if one must do non-optimal things like putting conflicting services on one machine
- Making them widely known and available.
- Using older hardware. Filling a GigE is less important than having some server, albeit with limited power, to test against.

What doesn't work

- Servers spend a lot of time in non-functional modes
 - NOCs need to have a red/green indicator
 - Possibly developers add Go/No-Go
- Apps don't co-exist; some sort of resource brokerage framework is suggested.
- Using iperf to troubleshoot TCP.
- Using NDT/NPAD to troubleshoot long paths
- Hobbyists (remove the feedback link?)

Observations

- Nobody knows how to troubleshoot TCP (Matt M. is learning)
- Expert systems are still merely a good idea
 - NDT and NPAD are capable of amusing assertions
 - Programs should report basic facts and print interpretations in gray