

International Research Connections Translight/PacificWave

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IRNC-TransLigt/PacificWave

- Collaborative Agreement under NSF IRNC Program
- Approx \$1M per year for 5 years
- Awarded March 1, 2005
- Primary Objectives
 - Build out PacificWave capabilities to enhance International R&E connectivity on West Coast
 - Land and connect AARnet (Australia) circuits
 - Land and connect Telescopes in Hawaii
 - Support other International R&E netowrks participating in Pacific Wave Exchange

What is Pacific Wave?



Pacific Wave is a state-of-the-art international peering and lambda integrated facility designed to serve advanced research, education, development, and high-tech networks throughout the Pacific Rim and the world.

Goal: enhance networking capabilities by increasing network efficiency, reducing latency, increasing throughput, reducing costs and provision point-to-point lambda services to meet the short and long-term needs associated with advanced application and network development and implementation.

Who Operates Pacific Wave?

A joint project of CENIC and Pacific Northwest Gigapop



In collaboration with University of Southern California and University of Washington



Pacific Wave Today

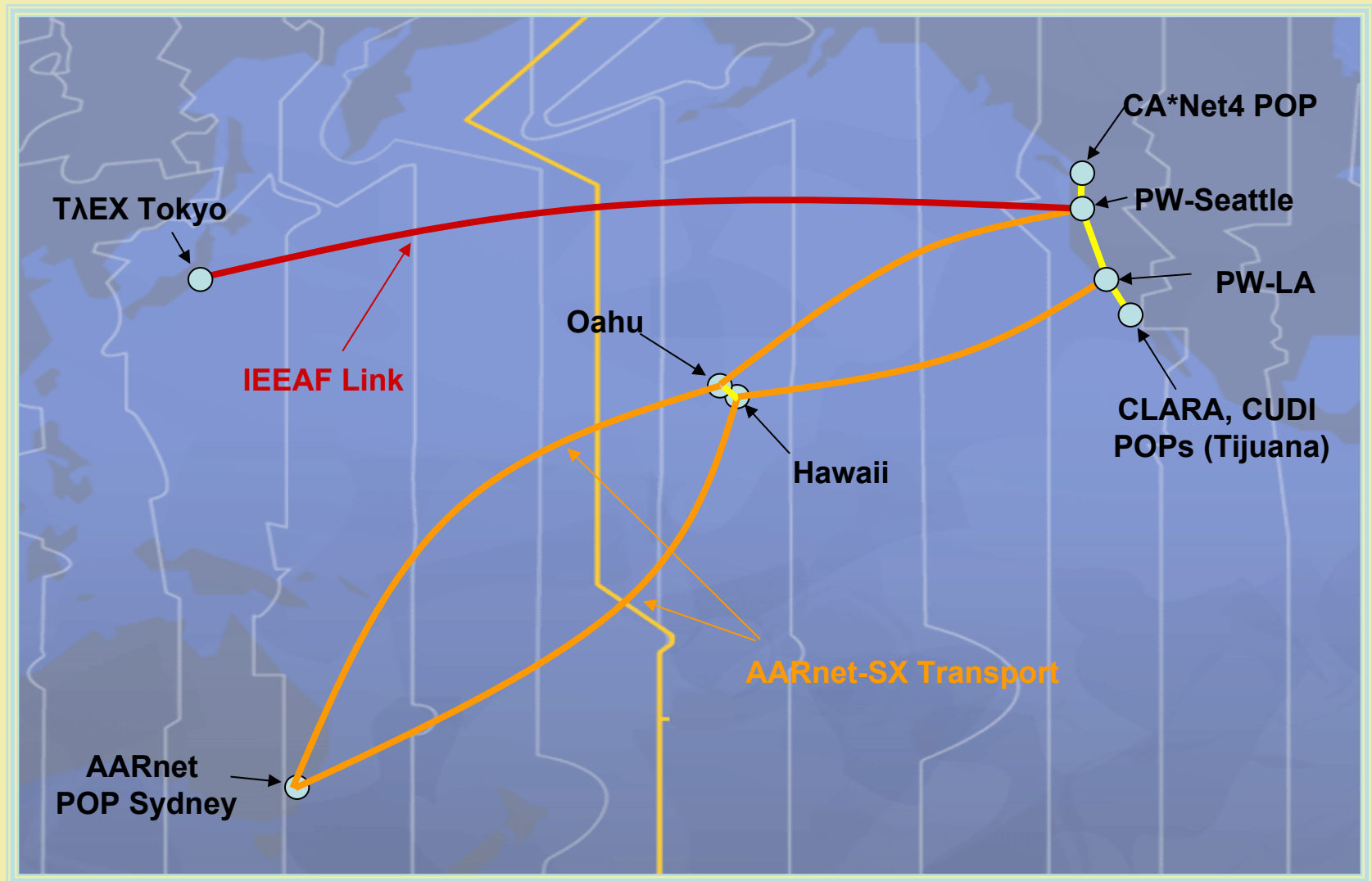


- Extensible peering exchange and lambda integrated facility
- Nodes (currently) in Seattle and Los Angeles Seattle, connected by a 10GbE wave provisioned over National LambdaRail (2,241 kilometers)
- AUP free
- Supports IPv4 and IPv6; multicast enabled
- Based on Layer 2, Ethernet connections (for layer 3 peering)
- Provides 24x7 NOC support.
- Priced consistently from node to node
- Allows participants to self-select their peering
- Allows participants to connect to one-location and access participants at all Pacific Wave nodes
- Supports advance applications
- Welcomes any research or development network that can meet the minimum network configuration requirements (connect with a router; support BGP; support jumbo-frames)

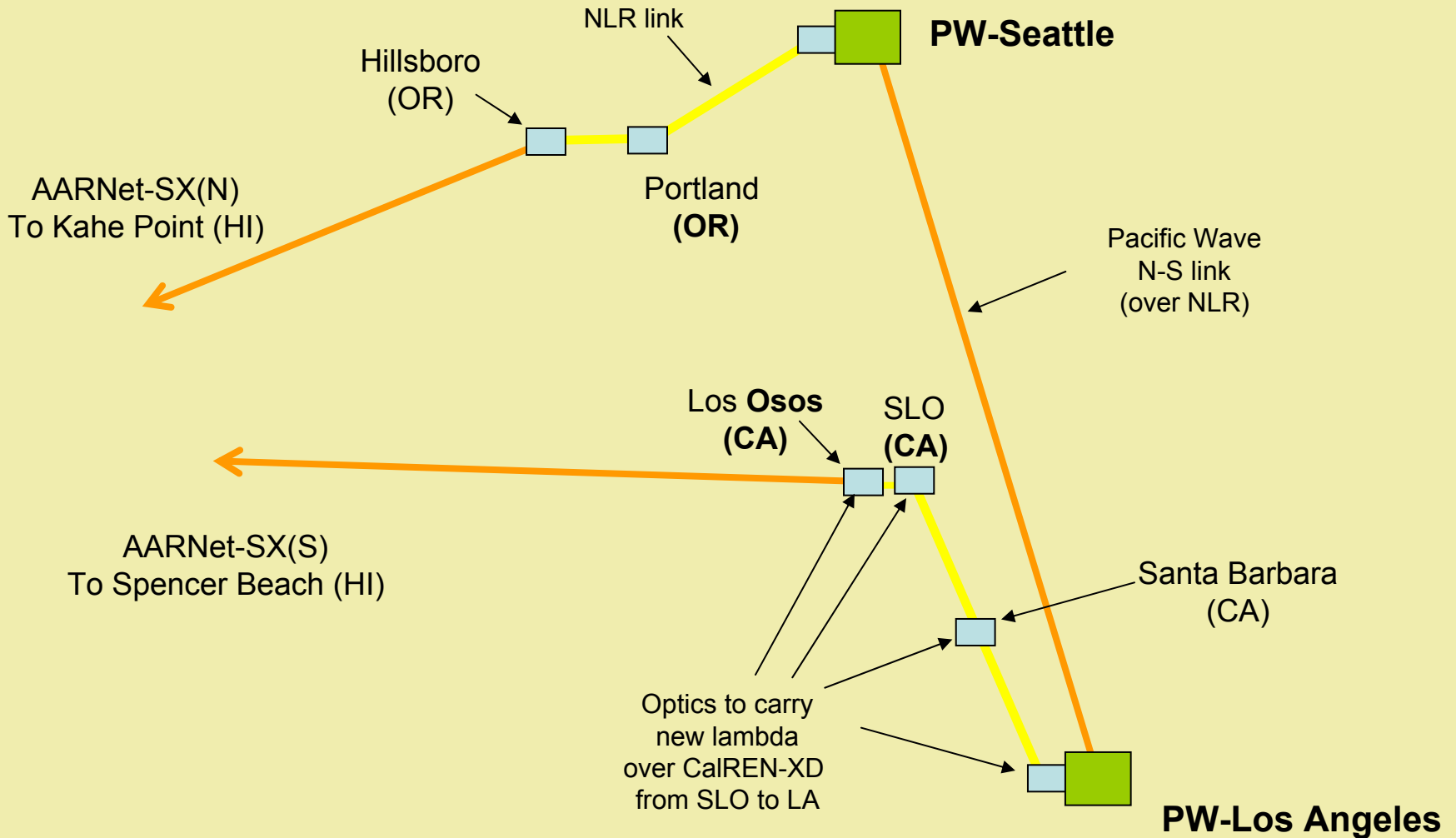
IRNC Translight/PacificWave (TL/PW)

- Proposal to NSF/IRNC (International Research Connections)
 - PI John Silvester (USC)
 - Co-PI Ron Johnson (UW)
- Objectives
 - Build out PacificWave exchange capabilities to facilitate international R&E connections on US Pacific Coast
 - Assist in the termination of AARnet SXTransport links to SEA and LAX
 - Assist in buildout of Hawaii connectivity
 - Assist in operation of IEEAF link Tokyo-Seattle
 - Provide ongoing engineering and technical support to international networks landing at PacificWave nodes
 - Develop and operate advanced capabilities to support optical interconnect and exchange needs of R&E networks
- Awarded 2005.03.01

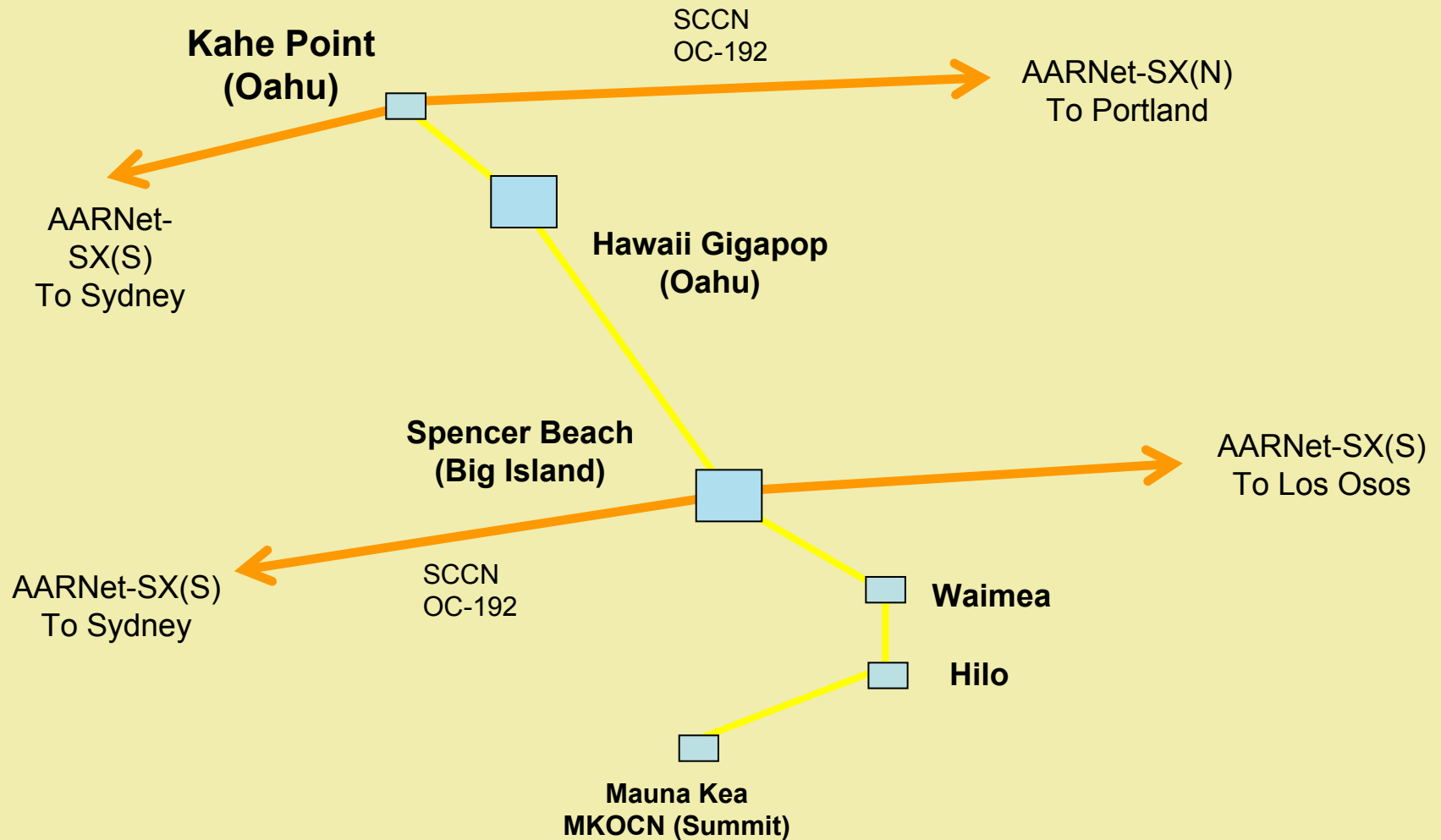
IRNC TL/PW 2005 Pacific Connections



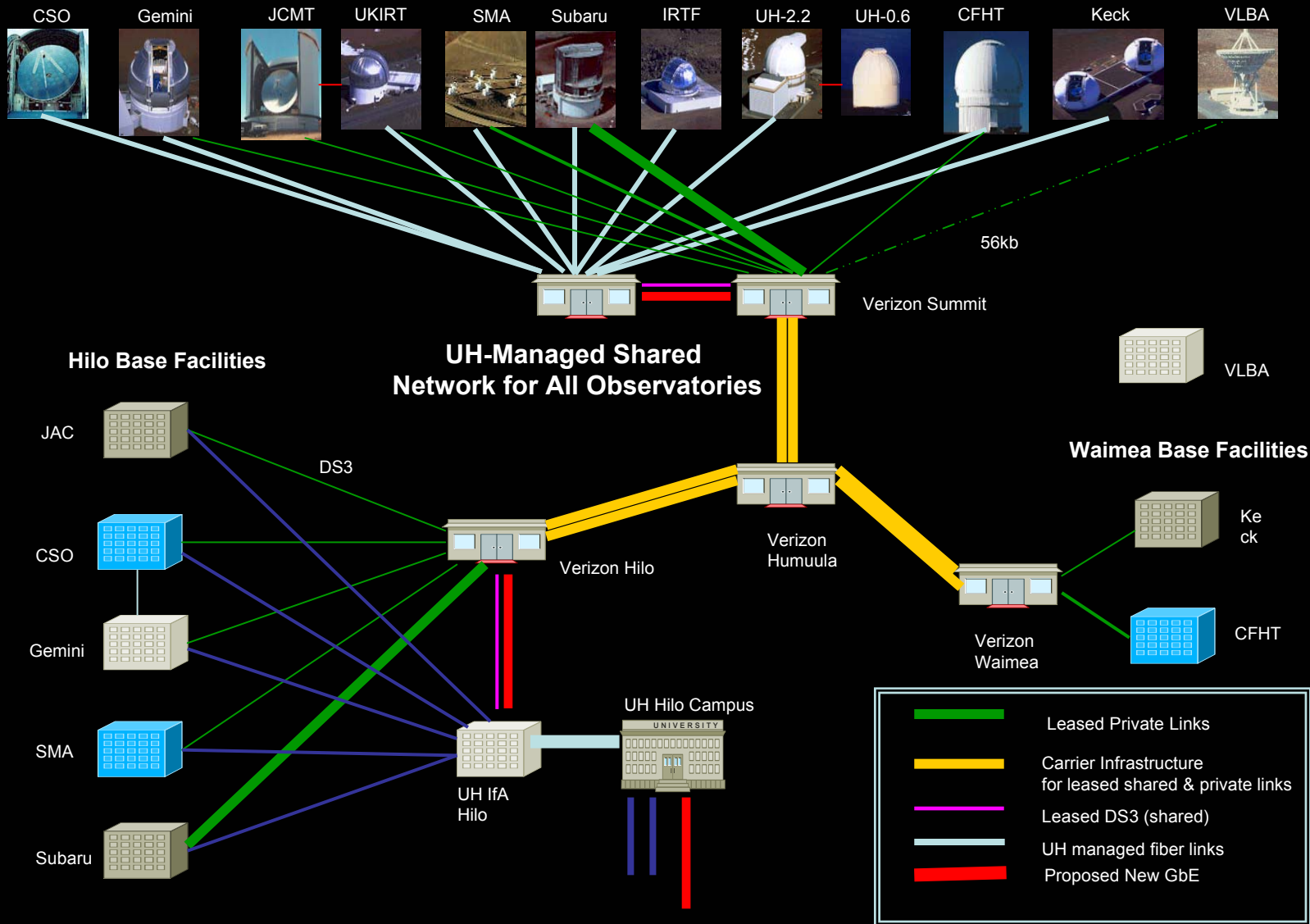
TL-PW – West Coast Detail



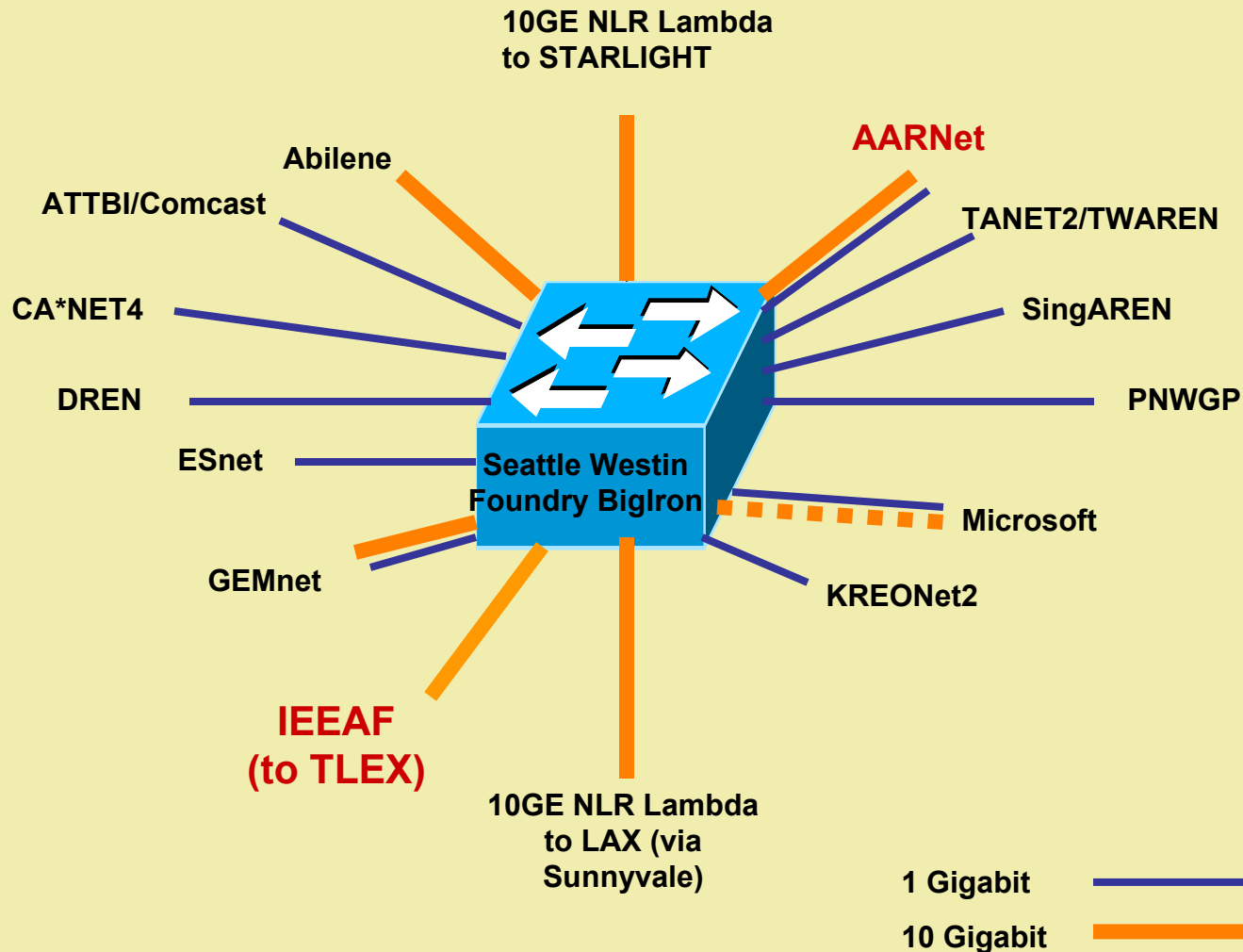
TL/PW – Hawaii Detail



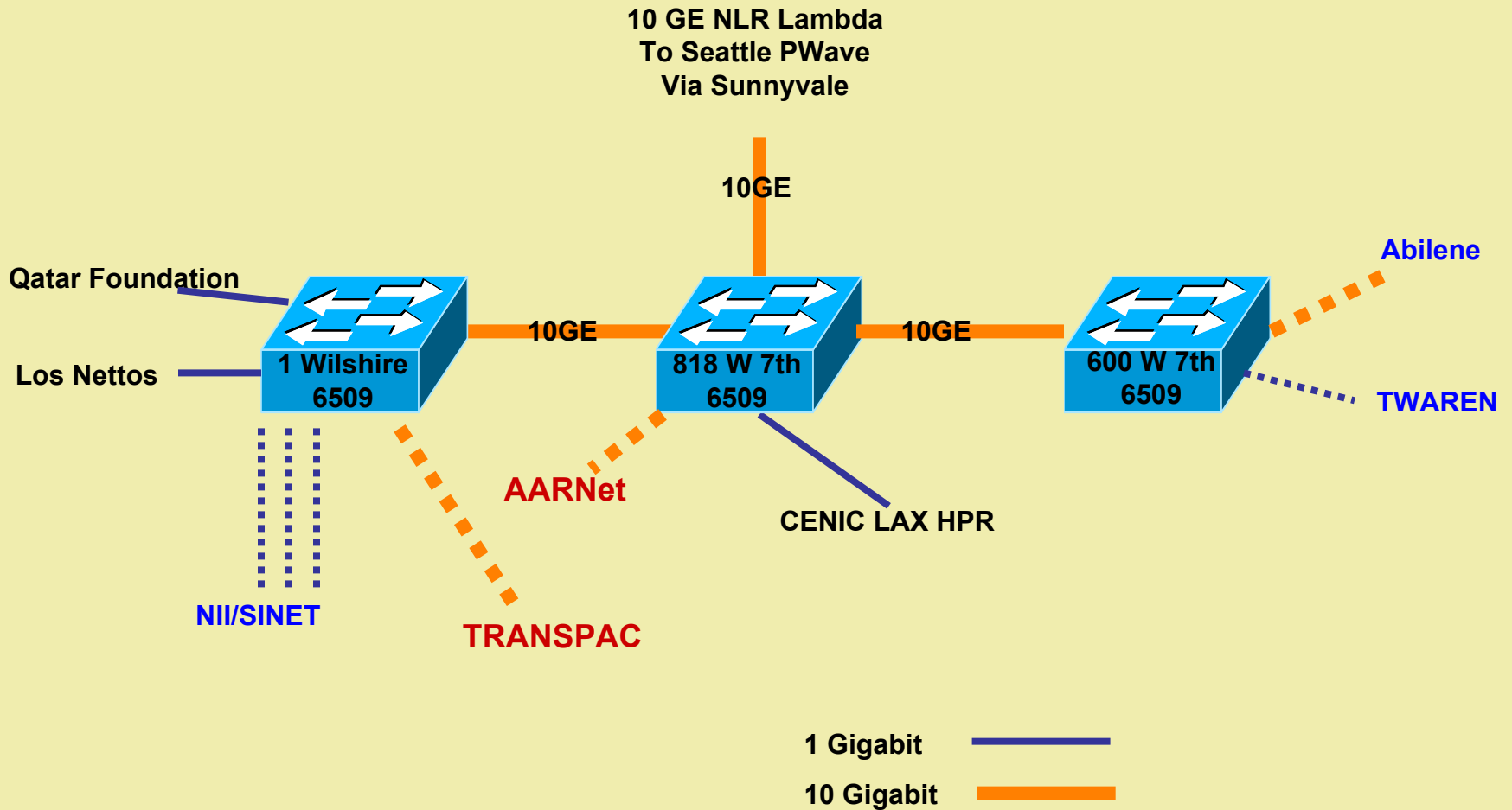
Mauna Kea Observatories Communication Network



PacificWave Seattle



Pacific Wave - Los Angeles



IRNC-TL/PW

- Year 1 will focus on bringing up AARnet links
- Year 2 will upgrade Hawaii connections and start integration of GLIF and HOPI applications. Other international connections to be supported.
- Year 3-5 – too soon to say, but will no doubt include expansion of the N-S capability and more automated Control Plane for GLIF and HOPI