

LHCONE OpenFlow Research Activity

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Overall Goals

- Understand how to accomplish an interdomain Openflow environment.
- Create such an environment for testing ideas about interdomain between Chicago and Amsterdam
- Keep the overhead to a minimum.

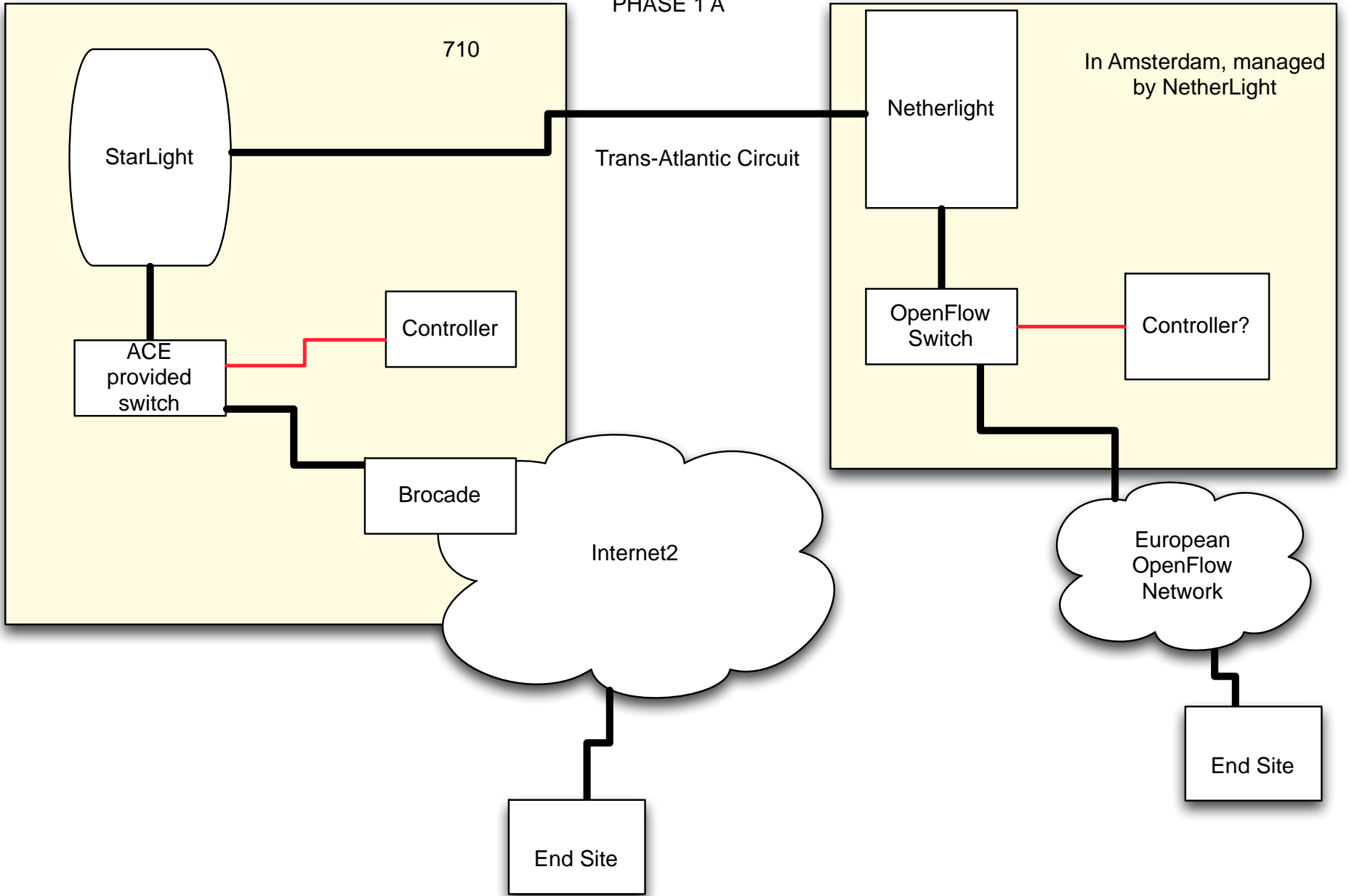
Phase 1 Goals

- Create a test OpenFlow enabled path between Europe and the US
- Includes:
 - A dedicated Openflow-enabled switch in Chicago
 - A dedicated Openflow-enabled switch Amsterdam with a 10G circuit connecting them
 - ACE circuit
- Current Participants:
 - Internet2
 - Netherlight
 - Starlight
 - ACE

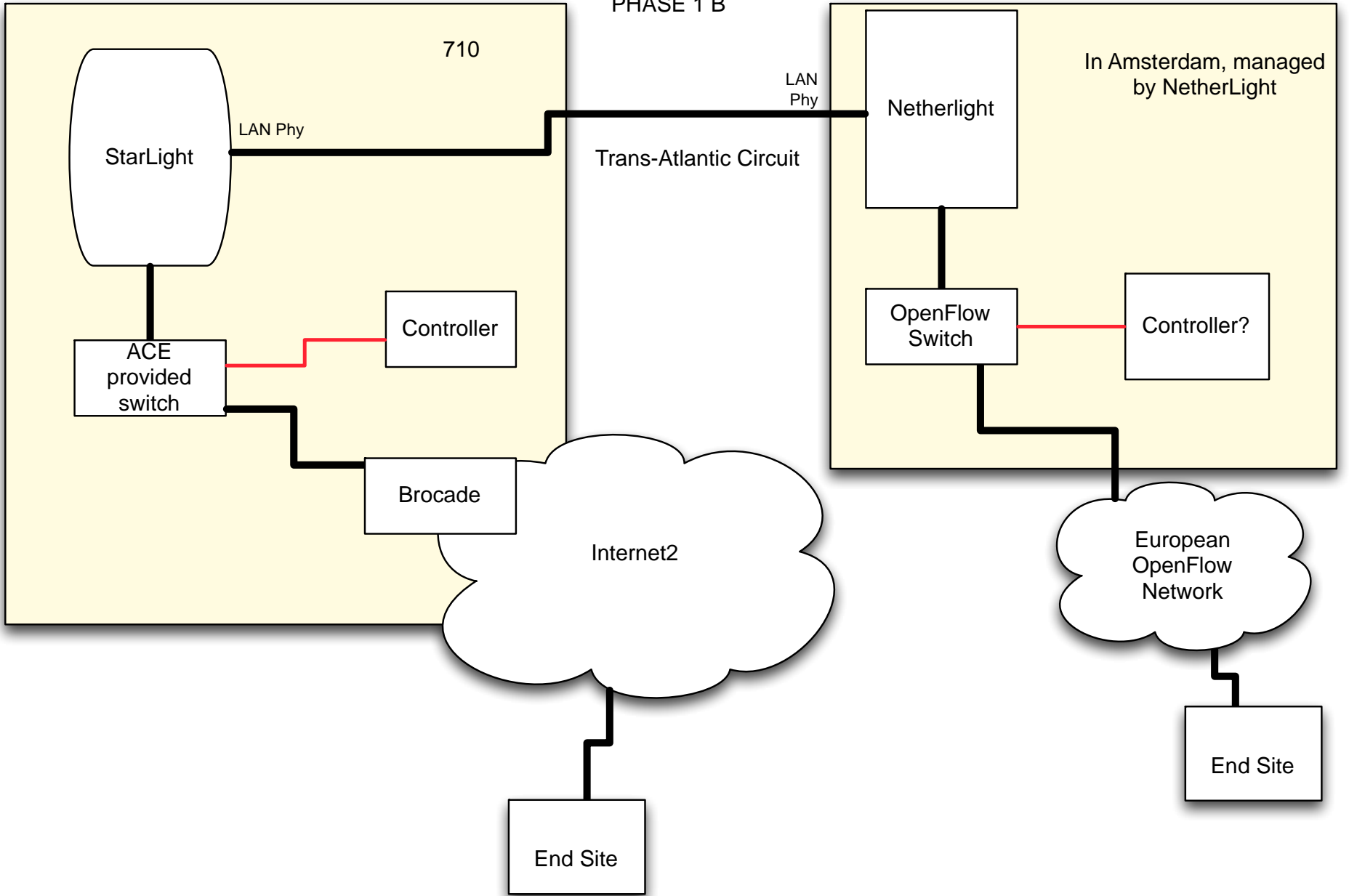
Phase 1A Implementation

- Initially, Pronto switches
 - Turns out we already have them.
- Initial implementation will not impact the current operational traffic on the link

PHASE 1 A



PHASE 1 B



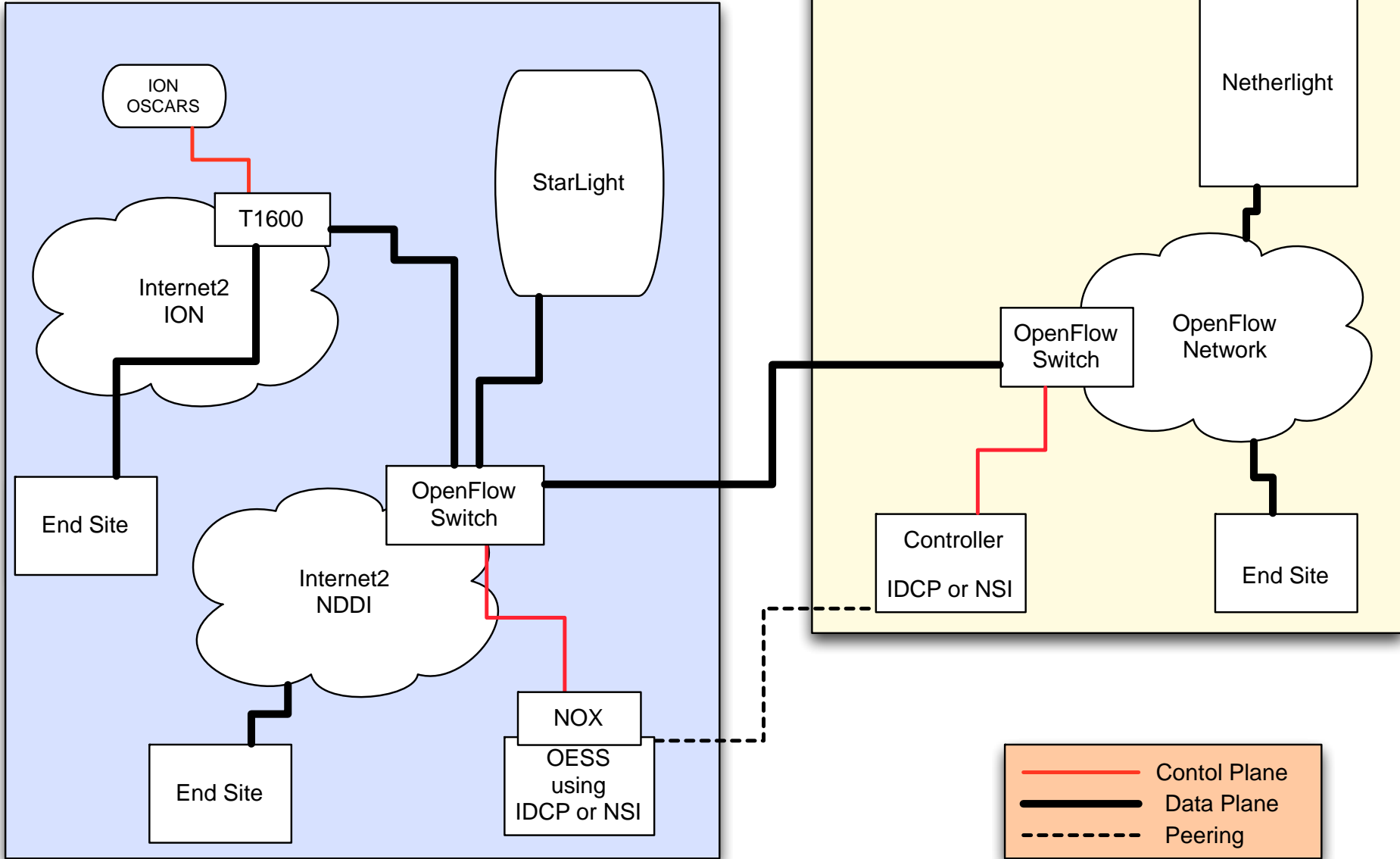
Phase 1B

- Subtle difference.
- The circuit is being re-tendered over the next few months.
- End result will be that the circuit will no longer be SONET, it will be LAN-PHY.

Phase 2 Goals

- Introduce production switches
 - e.g. Internet2 Brocade at Starlight
 - Move the circuit to land directly on Openflow switches.
- Introduce control plane(s) between multiple discrete OpenFlow “domains”
 - IDC
 - NSI
 - “SDN Peering”?
- Introduce Flowvisor to allow “slicing”.

Phase 2



Phase 2 Implementation

- No specific timeframe for this phase.
 - Depends a lot on Flowvisor development work
 - Phase 1 Demand