**MPLS-OPENFLOW BASED ACCESS/AGGREGATION NETWORK**

SPARC: SPLIT ARCHITECTURE CARRIER CLASS NETWORKS

- **Enhance Control Flexibility by Breaking Out Intelligence to Centralized Controller**
- **Interact with Distributed MPLS Control Plane via Legacy Protocols**
- **OAM & Protection Functions Implemented in Data Plane to Off-load Centralized Controller**

**MONITORING AND PROTECTION RUN IN DATA PLANE**

- Working & Protection Label Switched Paths (LSP) Monitored with Periodic Probe Packets (BFD)
- Client LSP Mapped to Working LSP via Virtual Ports
- When Working LSP Goes Down Client LSP is Automatically Re-Mapped to the Protection LSP

**INTERACT WITH MPLS CONTROL USING QUAGGA STACK**

- OpenFlow Domain Abstracked as a Single Virtual Router
- Domain External Interfaces Represented by Ports, Possible Endpoints are Loopbacks
- Only Reachability Information is Advertised for Scaling

**DEMO INCLUDES**

- MPLS OpenFlow Controller for Best Effort Point-to-Point and Multicast Traffic
- Seamless Interworking with MPLS Control Plane
- Establishment of BFD Monitoring in OpenFlow Domain
- OpenFlow Controller Driven Restoration and Data Plane Triggered Protection

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**SPARC consortium**

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