

# New Network Capabilities

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Jisc

A new  
network

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New Network Capabilities

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# More than that

- New Operational Model
- New Connections
- New Services



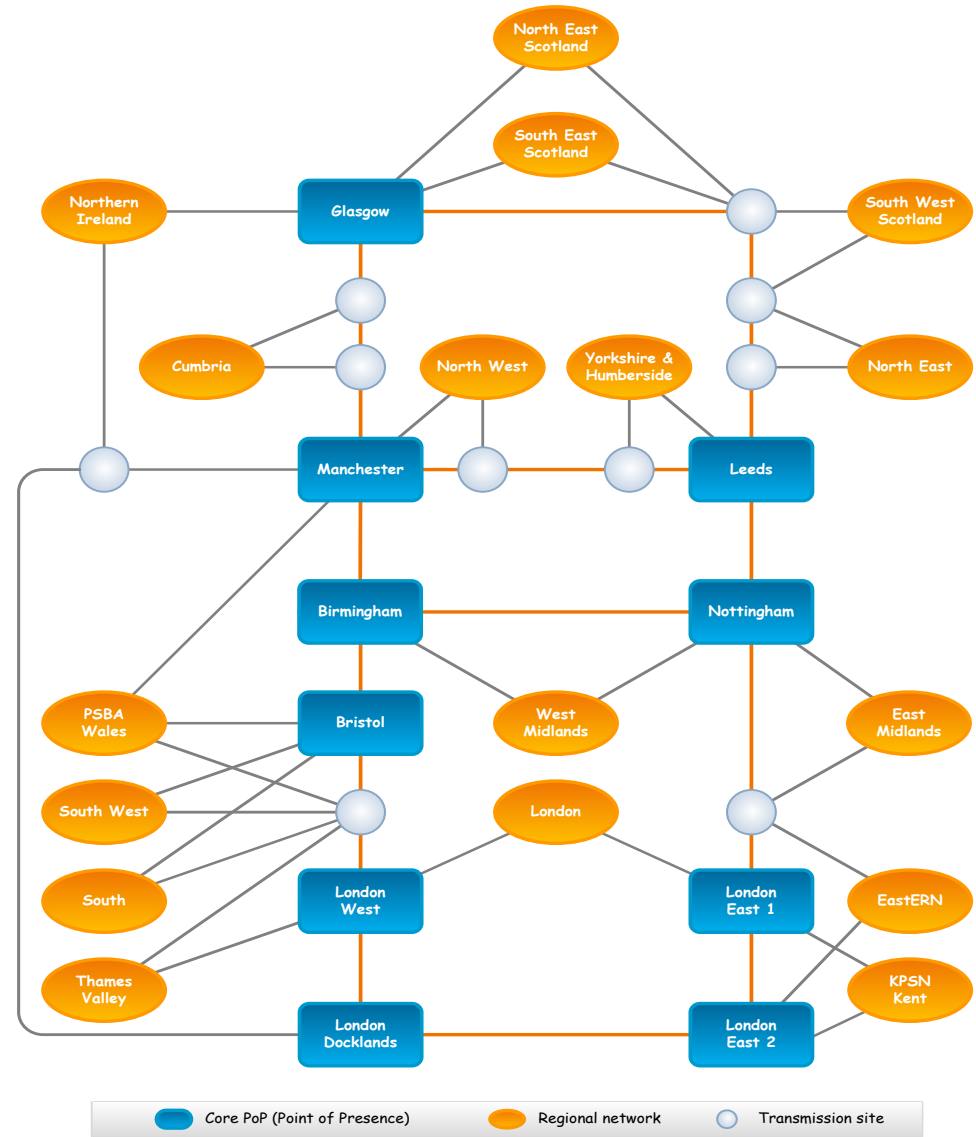
# Some Terms

- SDN – Software Defined Networking
- NFV – Network Function Virtualization
- Disaggregation – Having more boxes
- White Box – Cheap commodity hardware
- Cloud – Other peoples hardware



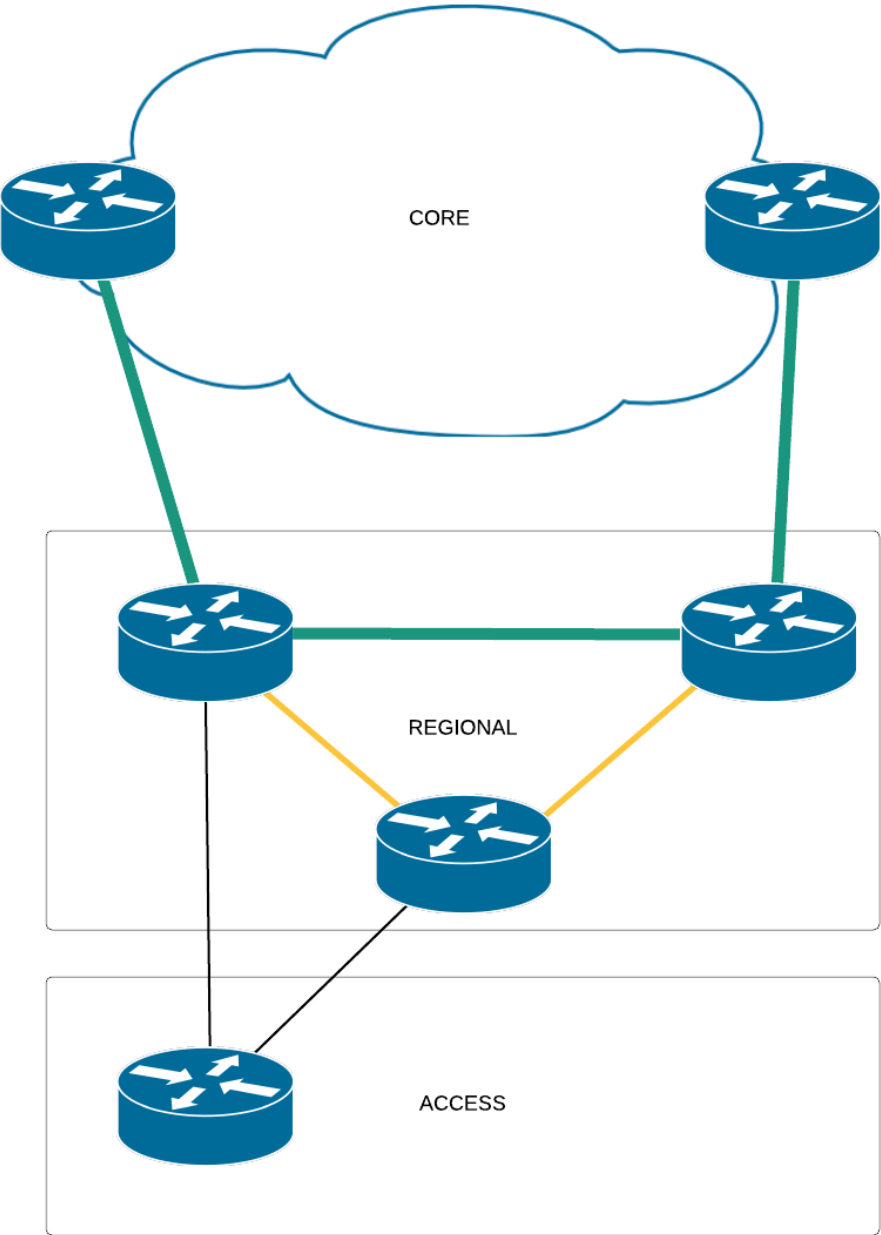
# Current Network

- Organic growth
- Strong core
- Disparate Regional Design

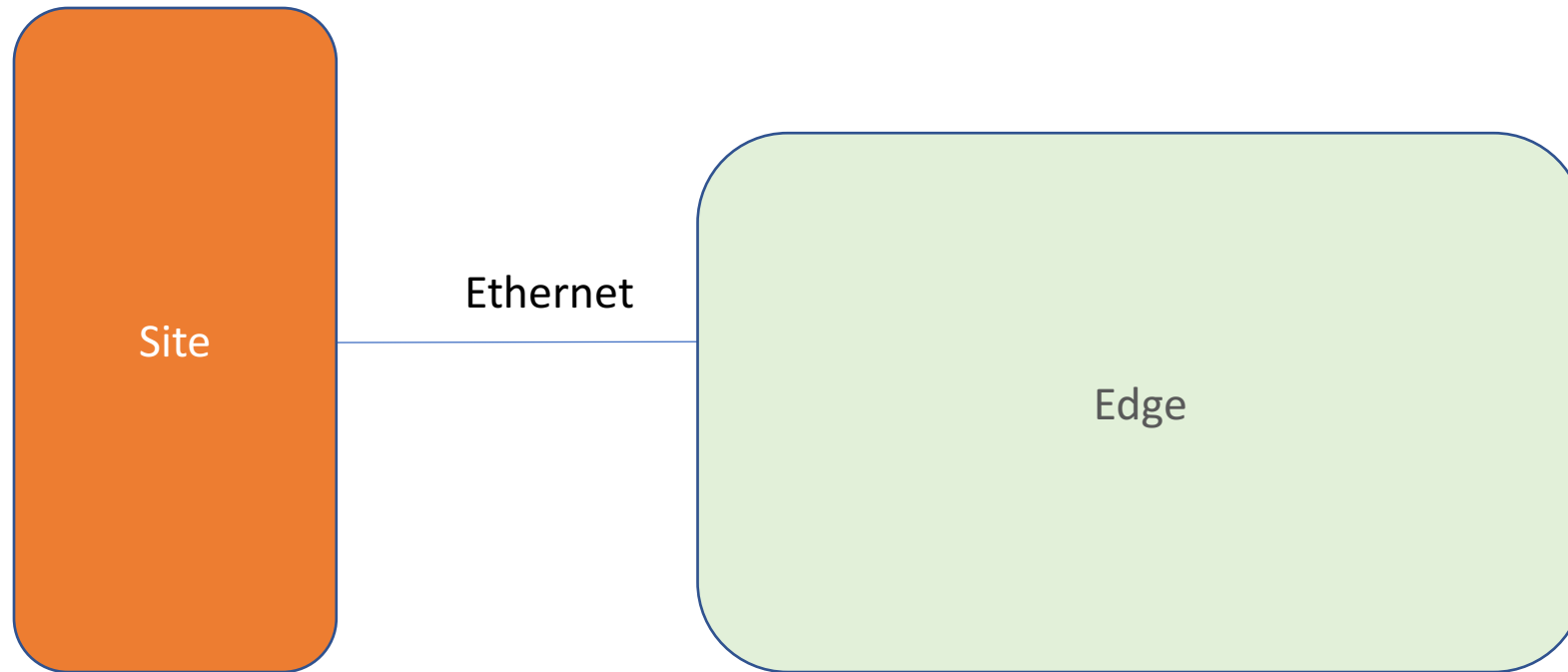


# New Network

- Unified single regional design
- Strong core
- Regional POPs in independent secure facilities
- Smaller regions (metro scale)

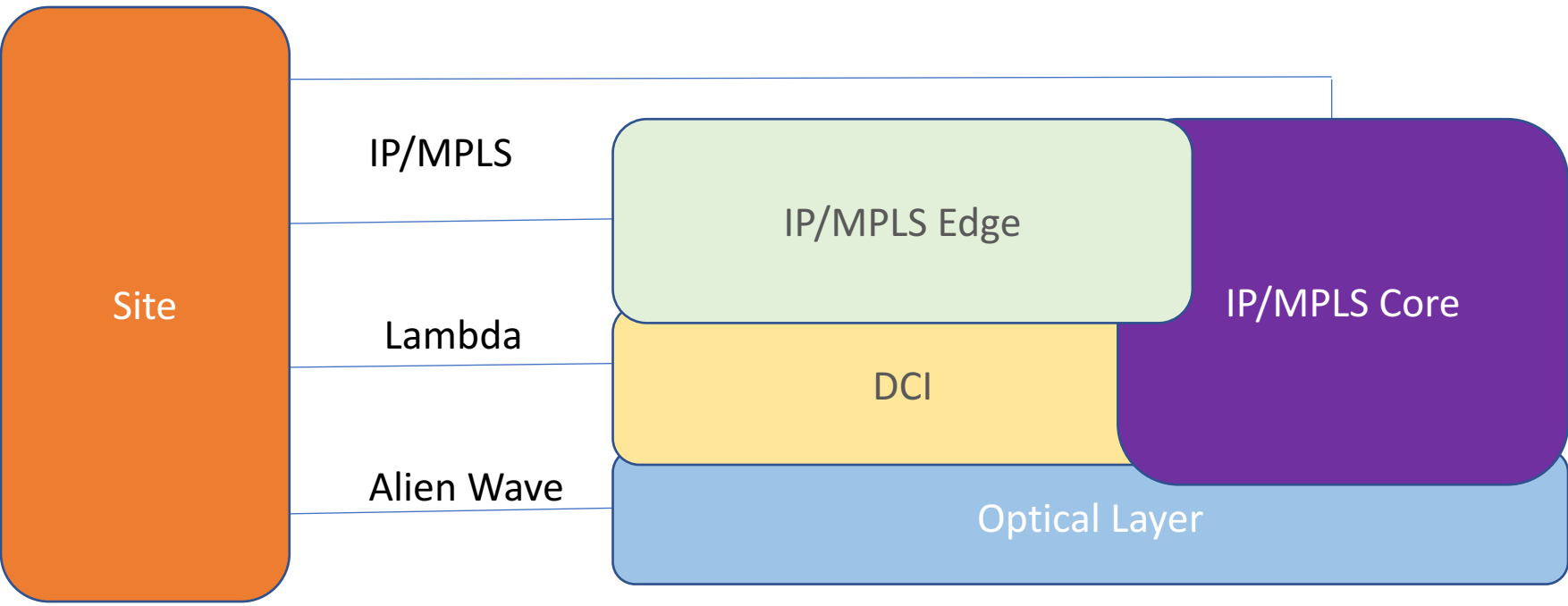


# Current Network Connections





# Evolved Network Connections

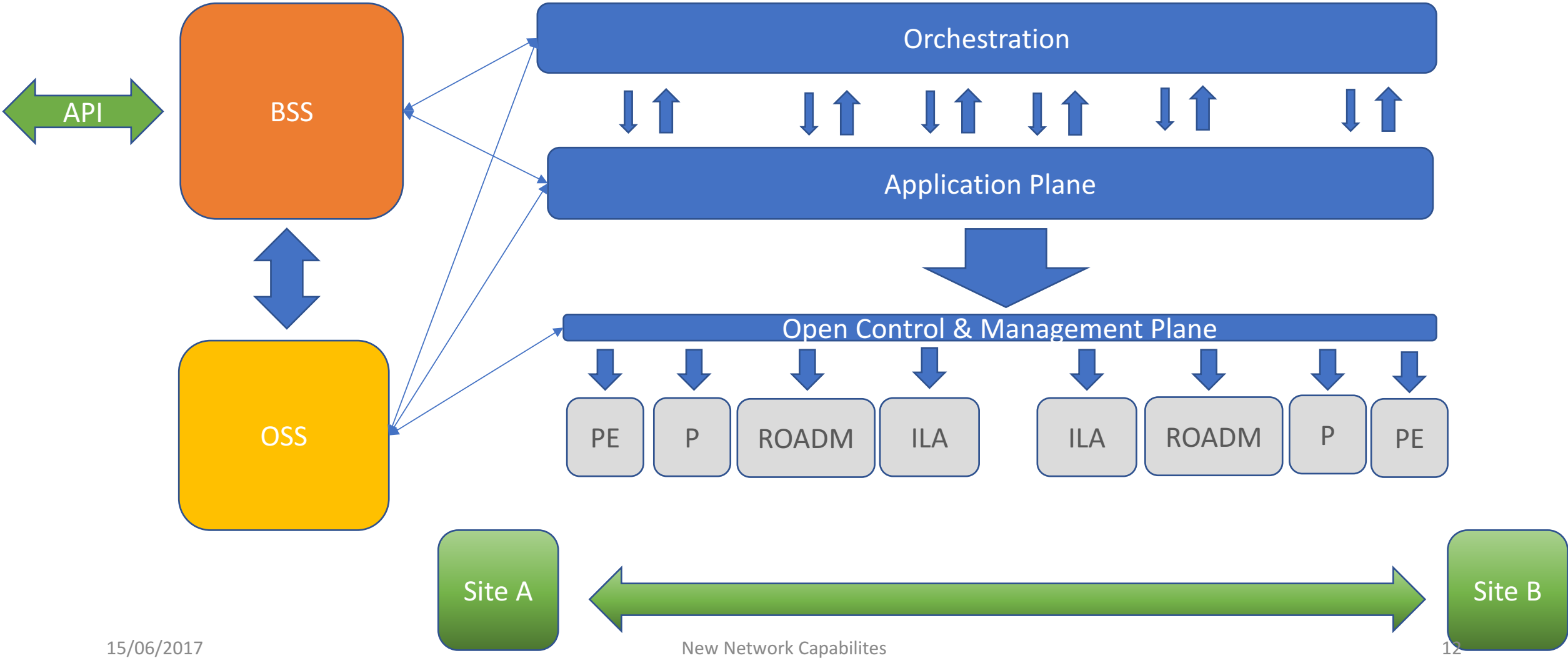


# Some More Terms

- OSS – Network, Fulfillment, Assurance, Delivery, Care
- BSS – Product, Order, Customer, Revenue
- MPLS - Multi protocol label switching
- CE/PE/P Router – MPLS routers
- ROADM - reconfigurable optical add-drop multiplexer
- ILA – In-line amplifier
- Orchestration – central control of end to end provisioning tasks



# Evolved Operational Model

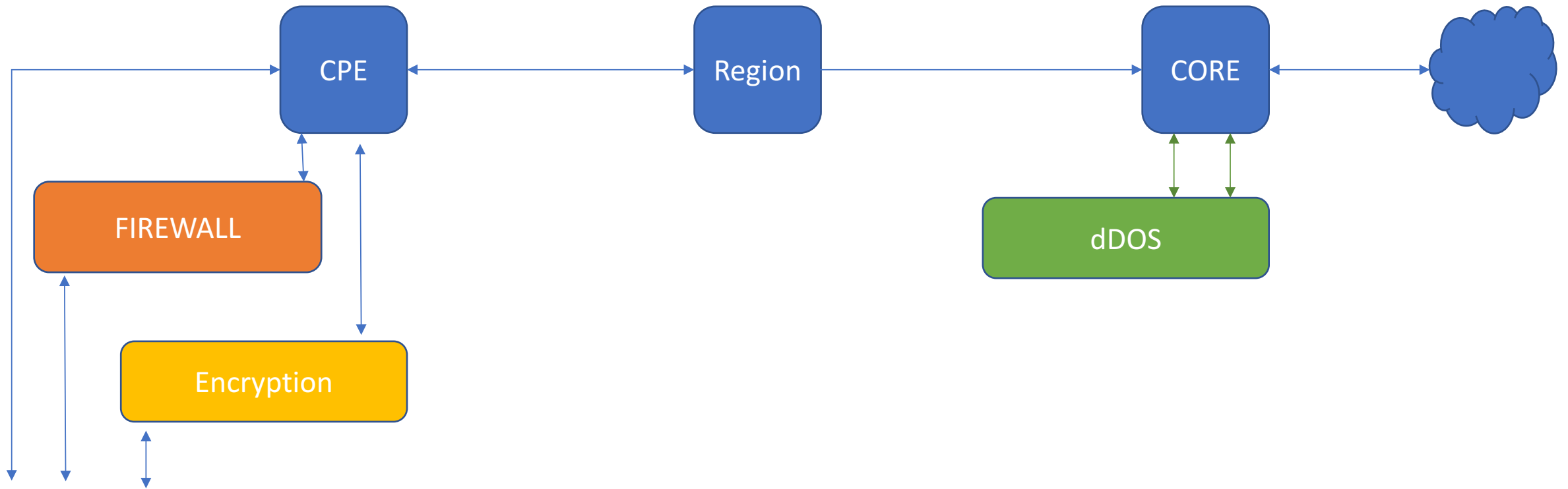


# Services

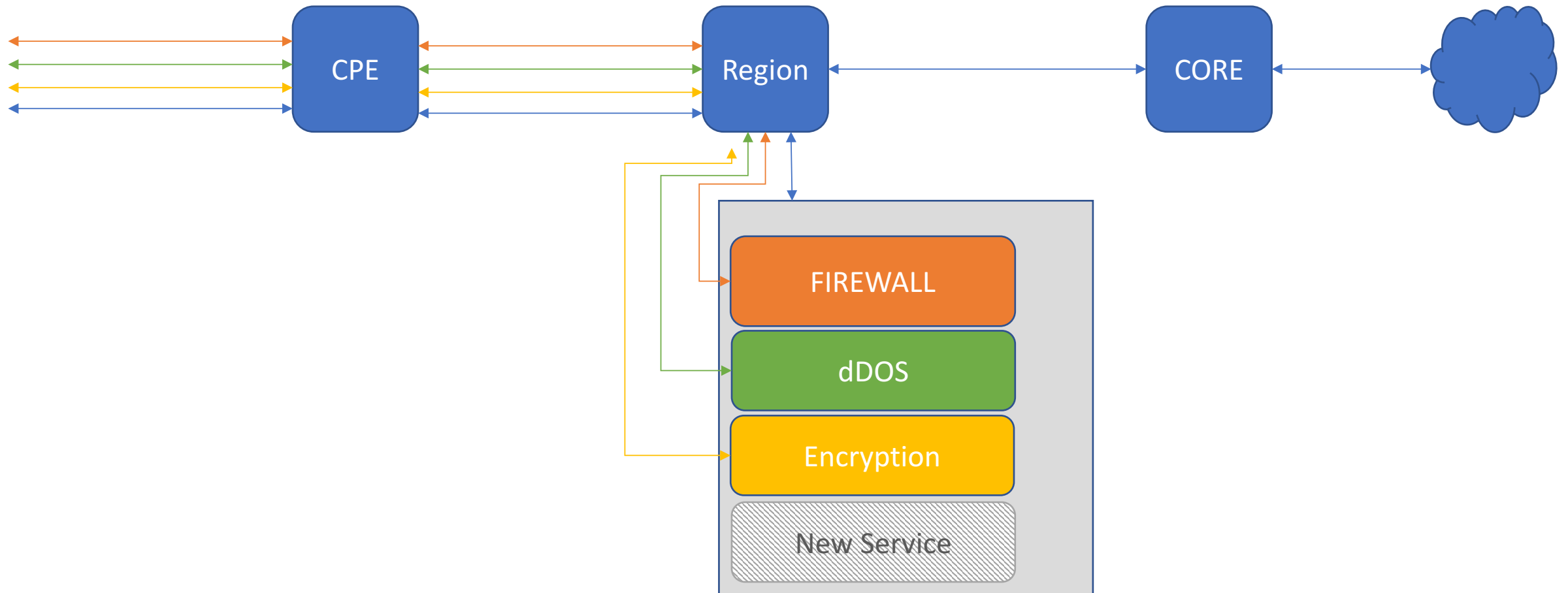
- Reason for being here, what do you need?
- Direction of travel is more flexibility and responsiveness to changing requirements



# Current

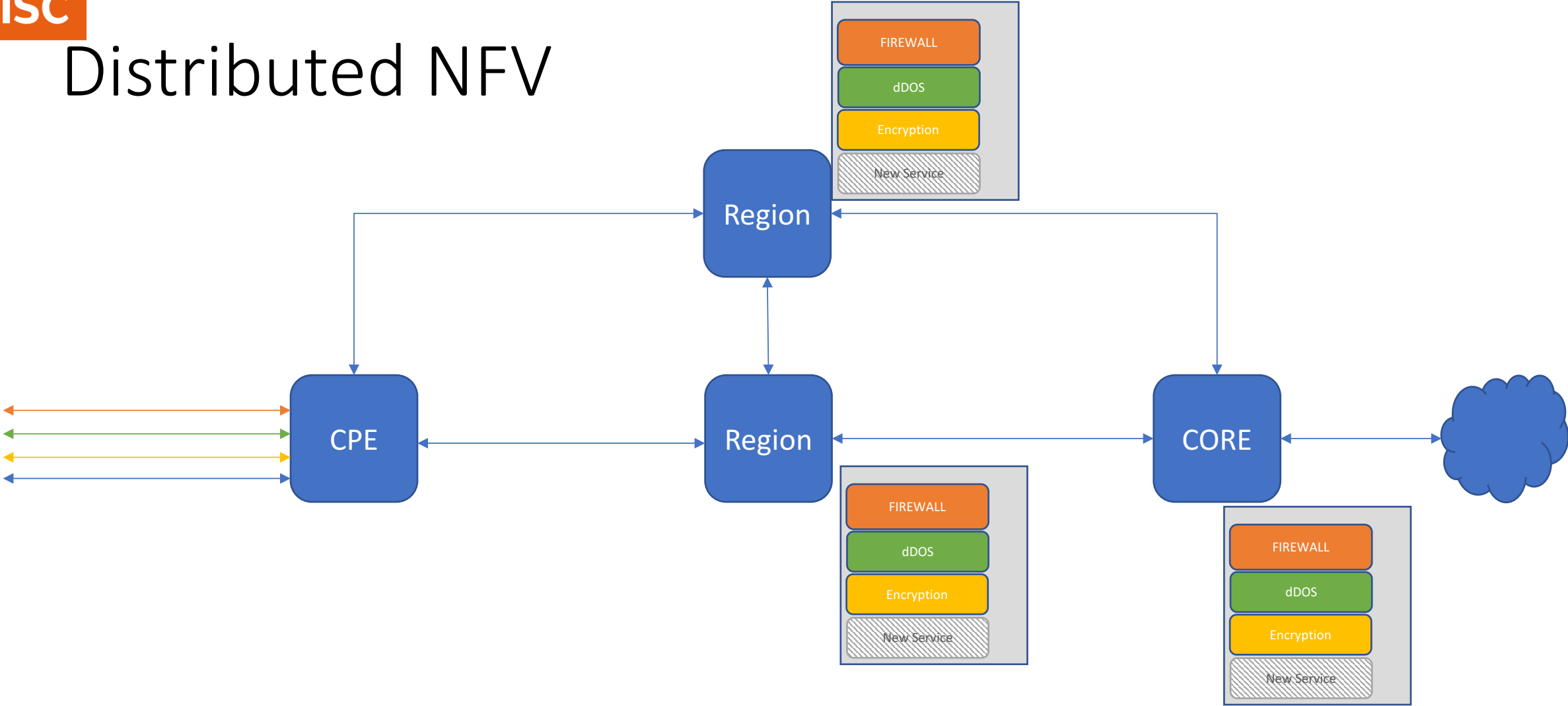


# Virtual Functions





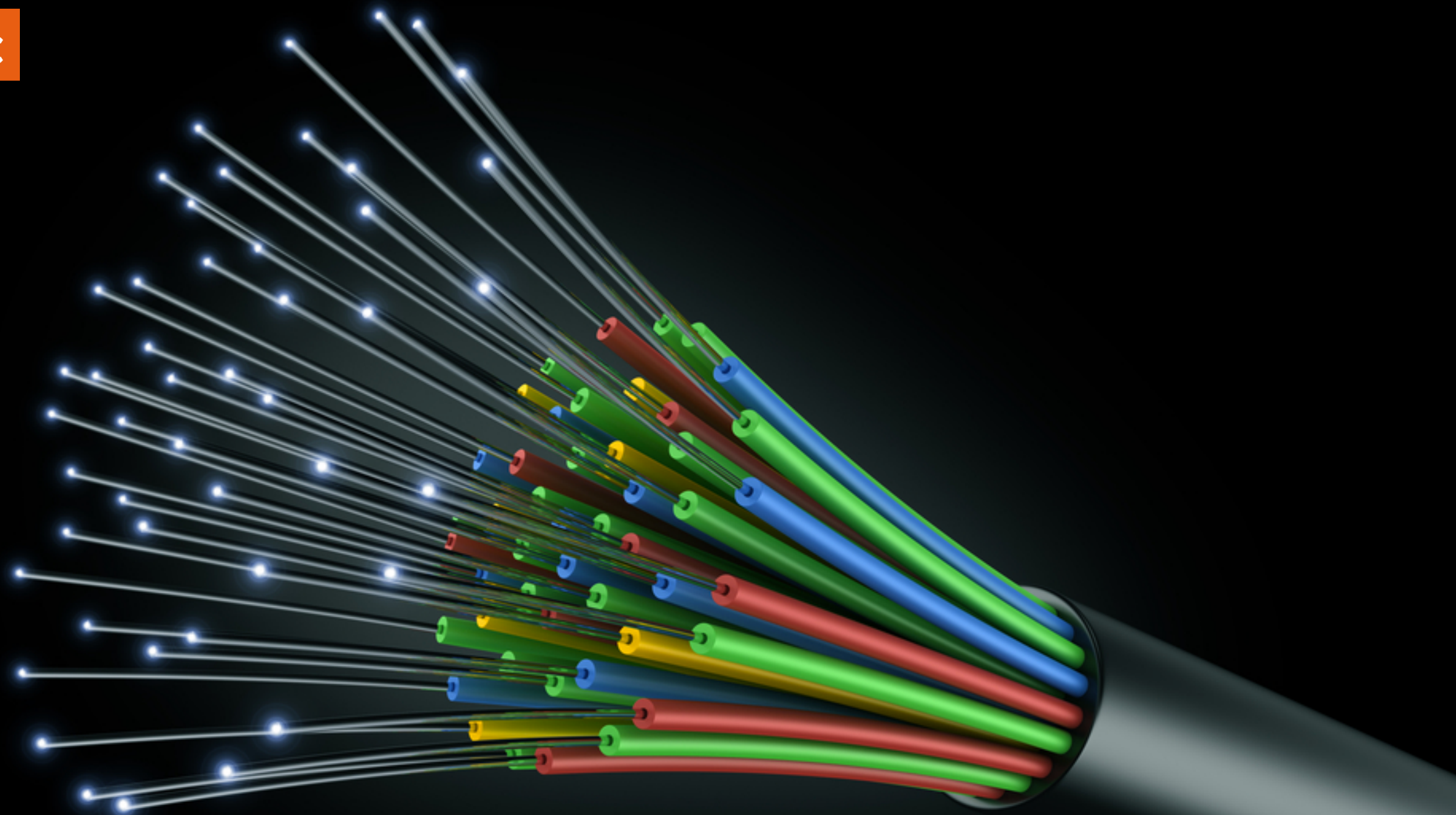
# Distributed NFV





# Cloud

- Public & Private Direct Access
- DC connect
- Remote compute
- Tiered Storage



# Fiber Testbed(s)

- Already in production
- New OR model allows us to provide more fiber or similar





# Safe Share

- Creates a 'castle' to 'castle' infrastructure
- Current version is hardware based
- Cloud end point
- Future hybrid model of hardware (for off net) and NFV

# Science DMZ\*

- Current use case is proven
- Candidate for NFV
- Science CDN

\*Please can we change the name



# End to end testing

- Team of experts
- perfSonar
- Fiona DTN
- LAN issues
- Cloud
- IPv6
- LAN environment
- Firewalls



# Network Research

- Requests for network information (BGP, Netflow, BMP)
- 'Experimental Network' a la GENI or dn42

# The end

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