# HKIX Updates and Latest Development

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HKNOG 9.0

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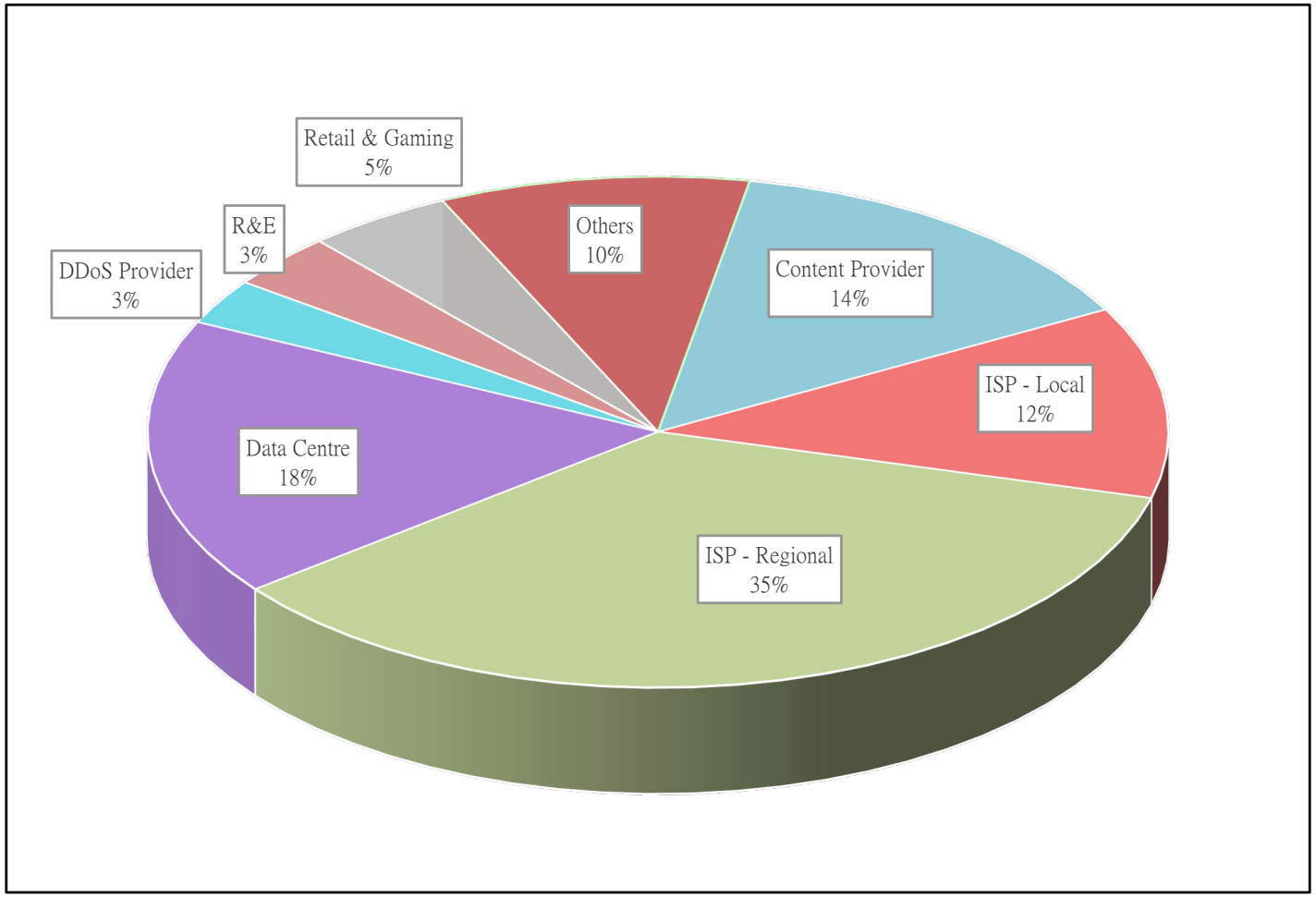
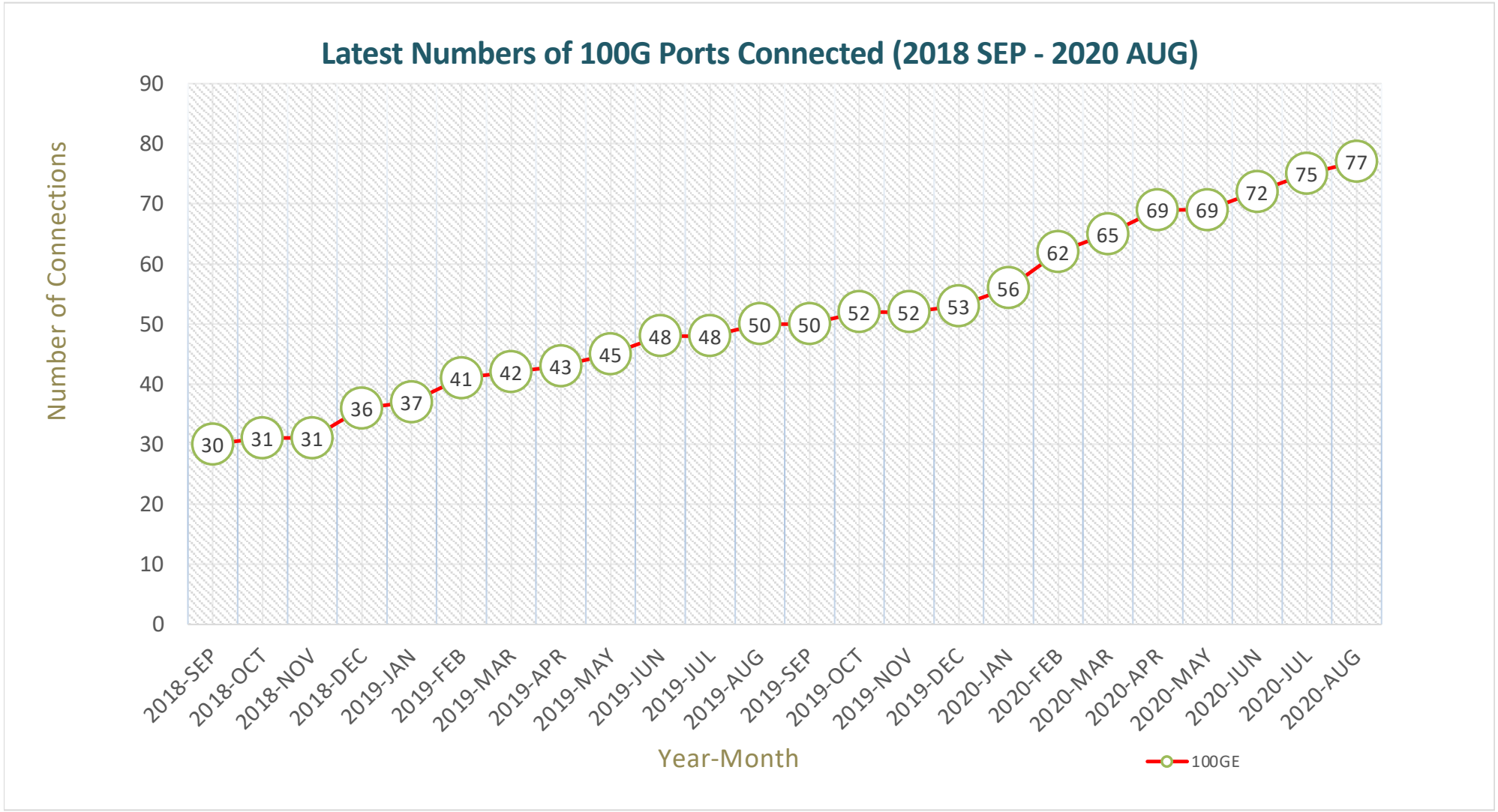
# HKIX Today

- Supports both MLPA (Multilateral Peering) and BLPA (Bilateral Peering) over layer 2
- Supports IPv4/IPv6 dual-stack
- More and more non-HK participants
- 330+ different networks (autonomous systems) connected
- 560+ physical connections in total
  - 77 **100GE**, 340+ **10GE** & 150+ **GE**
- 1.75+Tbps (5-min) total traffic at peak
- Annual Traffic Growth ~30%

# Portfolio of Participants



# 100GE Connections at HKIX



# 100GE Participants @HKIX (1/3)

- Akamai
- Amazon
- ANSONNET
- AOFEI
- BGP Consultancy
- BIGO
- China Mobile HK
- China Mobile International
- CloudFlare
- Continent 8
- Facebook

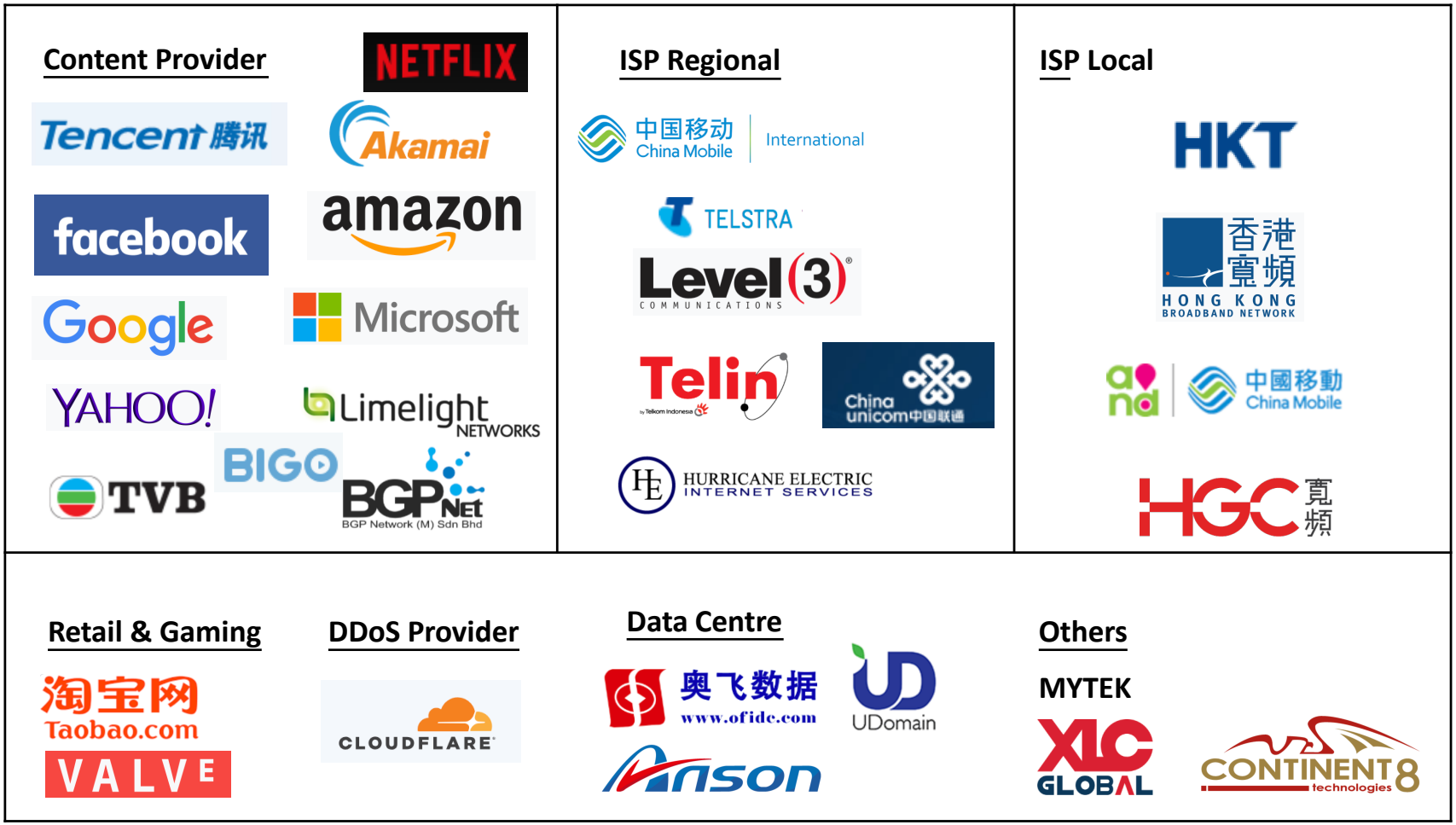
# 100GE Participants @HKIX (2/3)

- Google
- HKBN
- Hurricane Electric
- HGC
- PCCW
- Level 3
- Limelight
- Microsoft
- Mytek
- Netflix
- PCCW Global

# 100GE Participants @HKIX (3/3)

- Taobao
- Telin
- Telstra
- Tencent
- TVB
- Udomain
- China Unicom HK
- Value
- XLC Global
- Yahoo

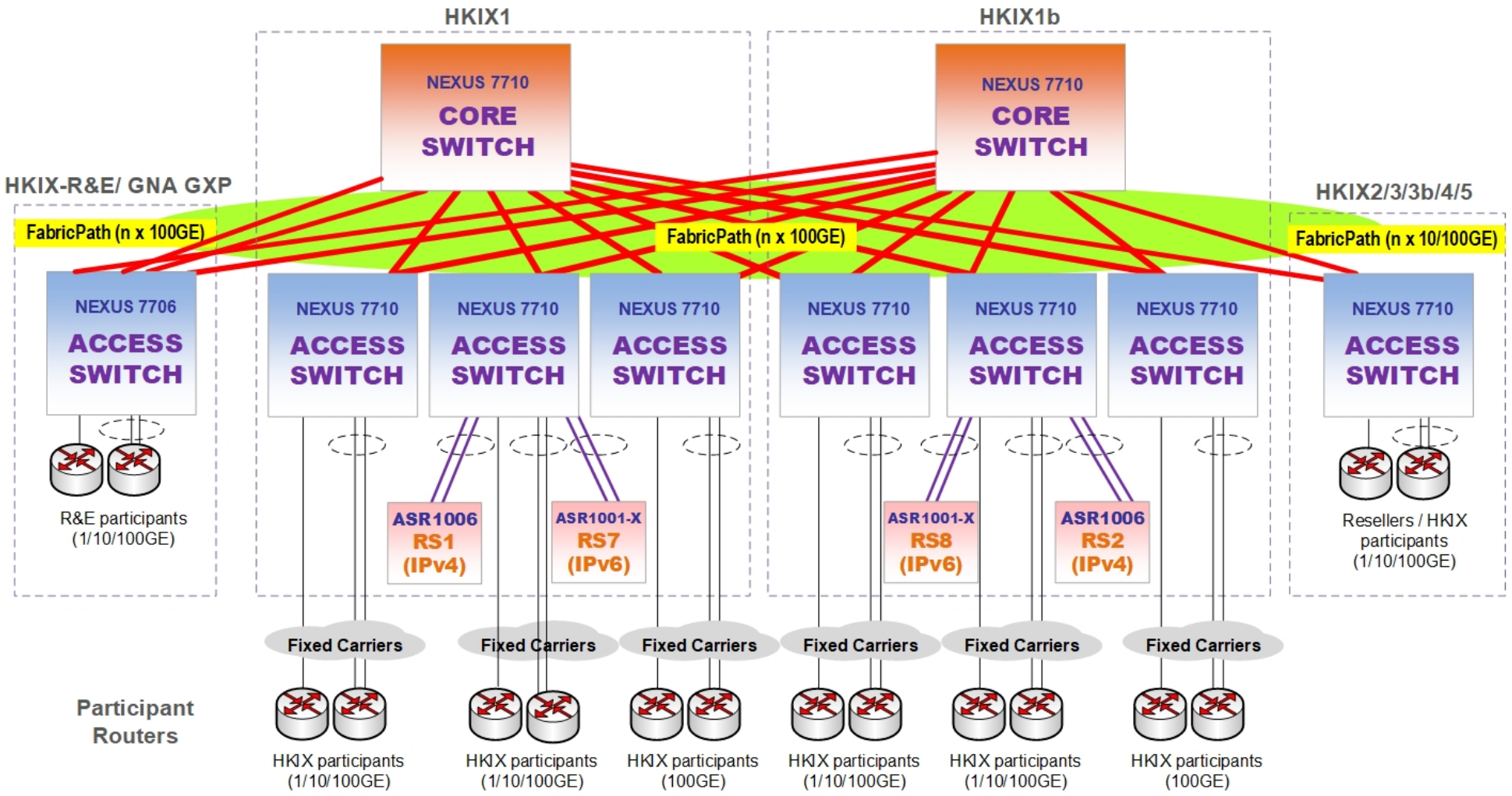
# HKIX's 100GE participants at a glance



# What we have done in 2019-20

- New route servers (RS7 & RS8) for IPv6 peering
- New access switches dedicated for 100GE connections
- More 100G links added to the Fabric Path backbone
- New satellite site extension to MEGA-i
- Support of IRR filtering and decommission of AS filtering on HKIX route servers
- RPKI deployment at HKIX
- ISO27001 Certification
- New features in Customer Portal
- Speed test servers at HKIX for Speedtest.net

# HKIX Network Diagram (Jul 2020)




1. **HKIX1** and **HKIX1b** are the two core sites of HKIX at CUHK while **HKIX2/3/3b/4/5** are HKIX satellite sites outside of CUHK.
2. HKIX participants are encouraged to connect to multiple sites for site resilience.

# Filtering on HKIX Route Servers

AS filter update on route servers has been ceased on 1-Jul-2020 and onwards. Please change to use **IRR filtering** if you would like to update the filters for BGP route announcement.

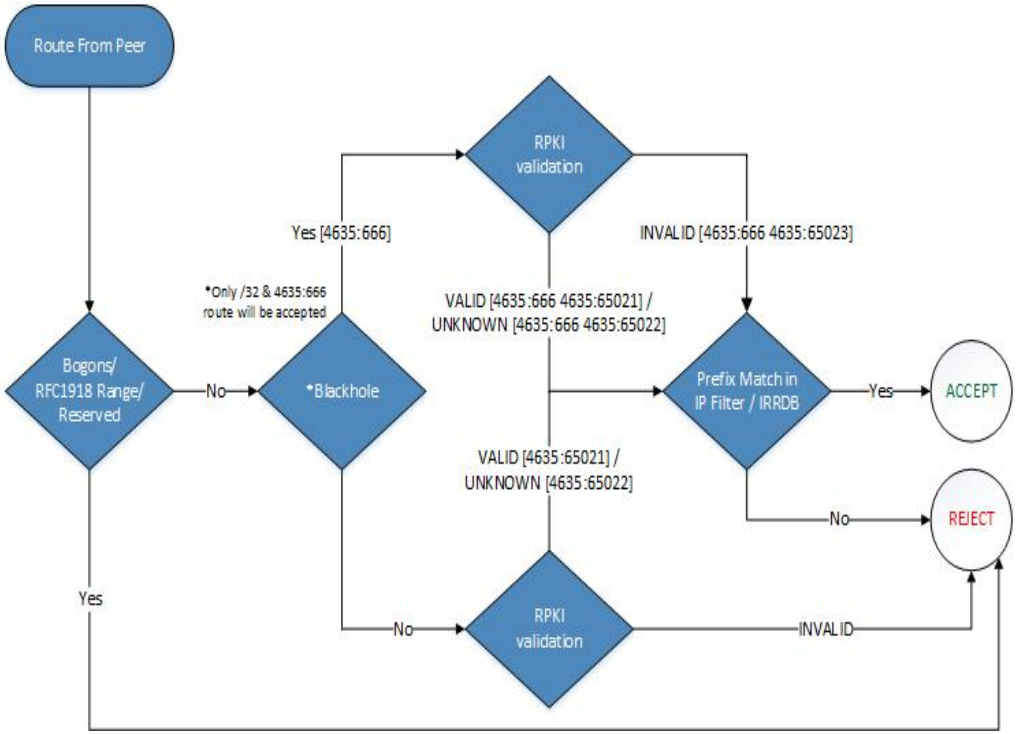
- **IRR filtering**
  - Applicable to general HKIX members
  - Use IP prefix list instead of IP address list
  - Automatically update from Internet Routing Registry database
  - Please keep your AS-SET updated on IRR database

- **IP address filtering**
  - Manual processes are involved (not recommended)
  - Participant needs to submit the change and wait for approval
  - Use IP address for filtering

# RPKI Deployment at HKIX

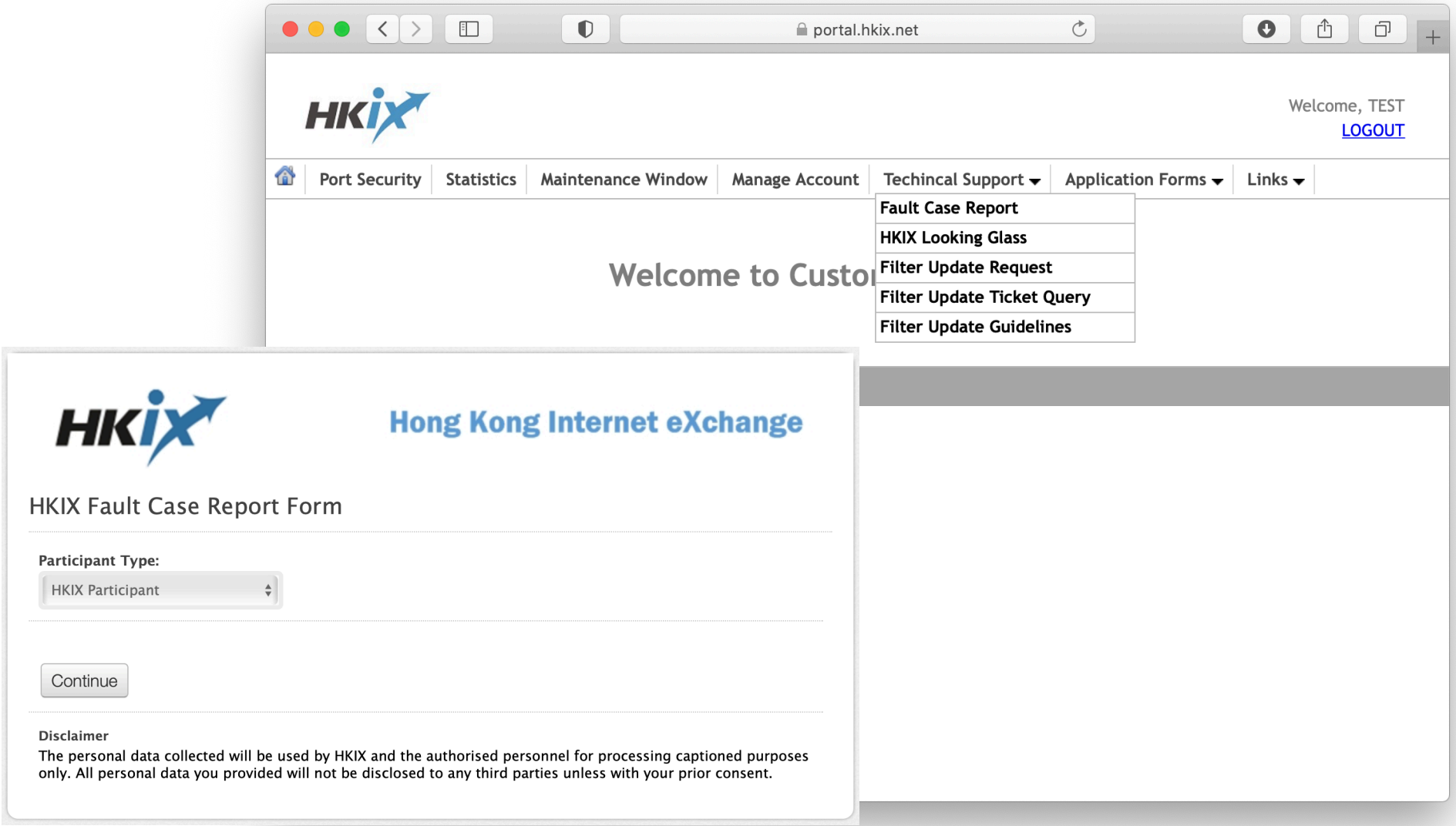
- Fully Implemented on HKIX route servers on Jun 21
- Check BGP routes with PRKI validators and drop invalids
- Accept and tag valid and unknown routes with 4635:65021 and 4635:65022 respectively
- Blackhole /32 route will be accepted

| RPKI Validation | No. of Routes | Percent |
|---|---|---|
| RPKI Valid | 100,497 | 25.7% |
| RPKI Not Found | 289,070 | 73.9% |
| RPKI Invalid (Dropped) | 1,776 | 0.45% |
| Total Routes Recevied | 391,343 | 100.0% |



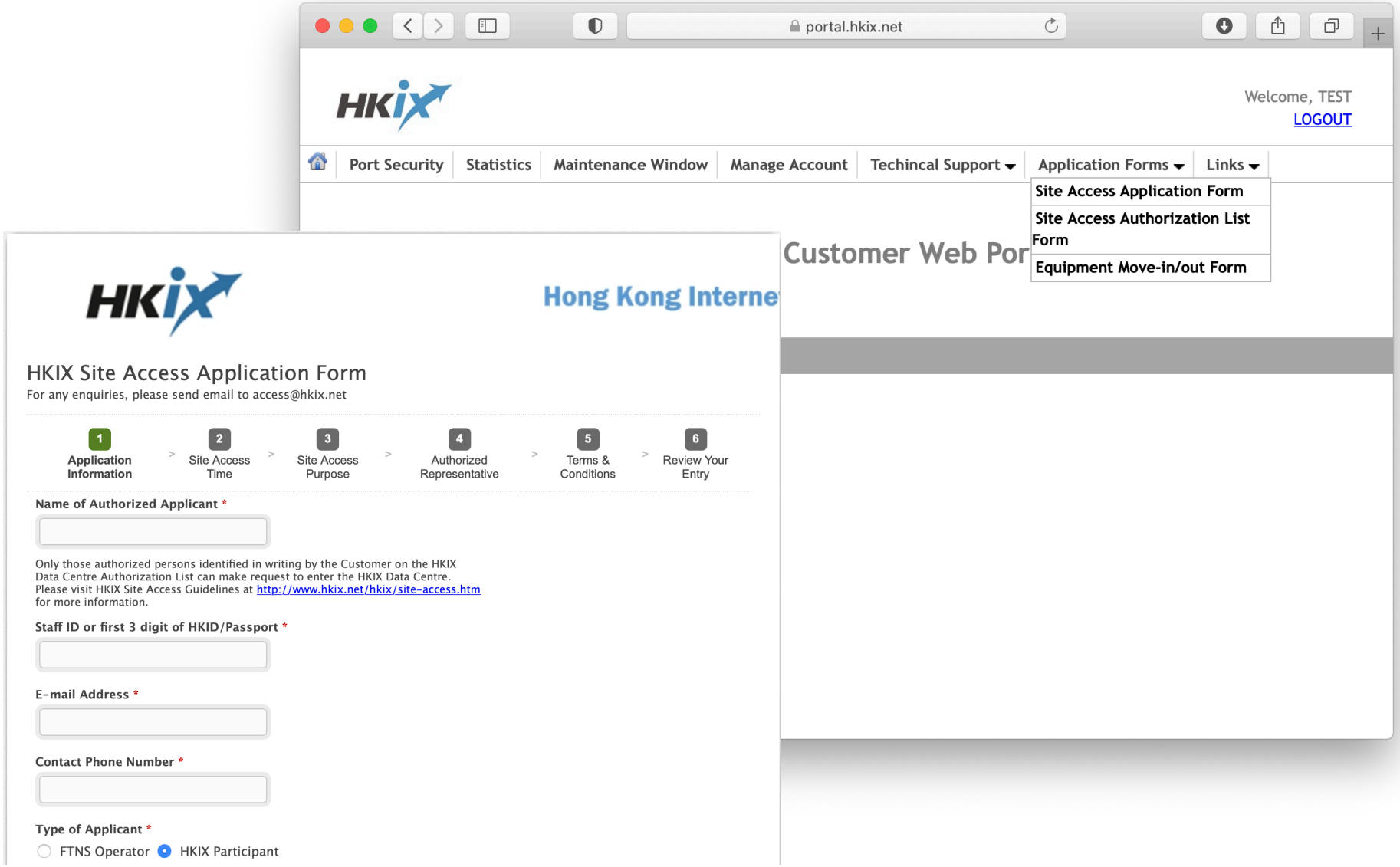
# New features in Customer Portal (1)

## Technical Support:



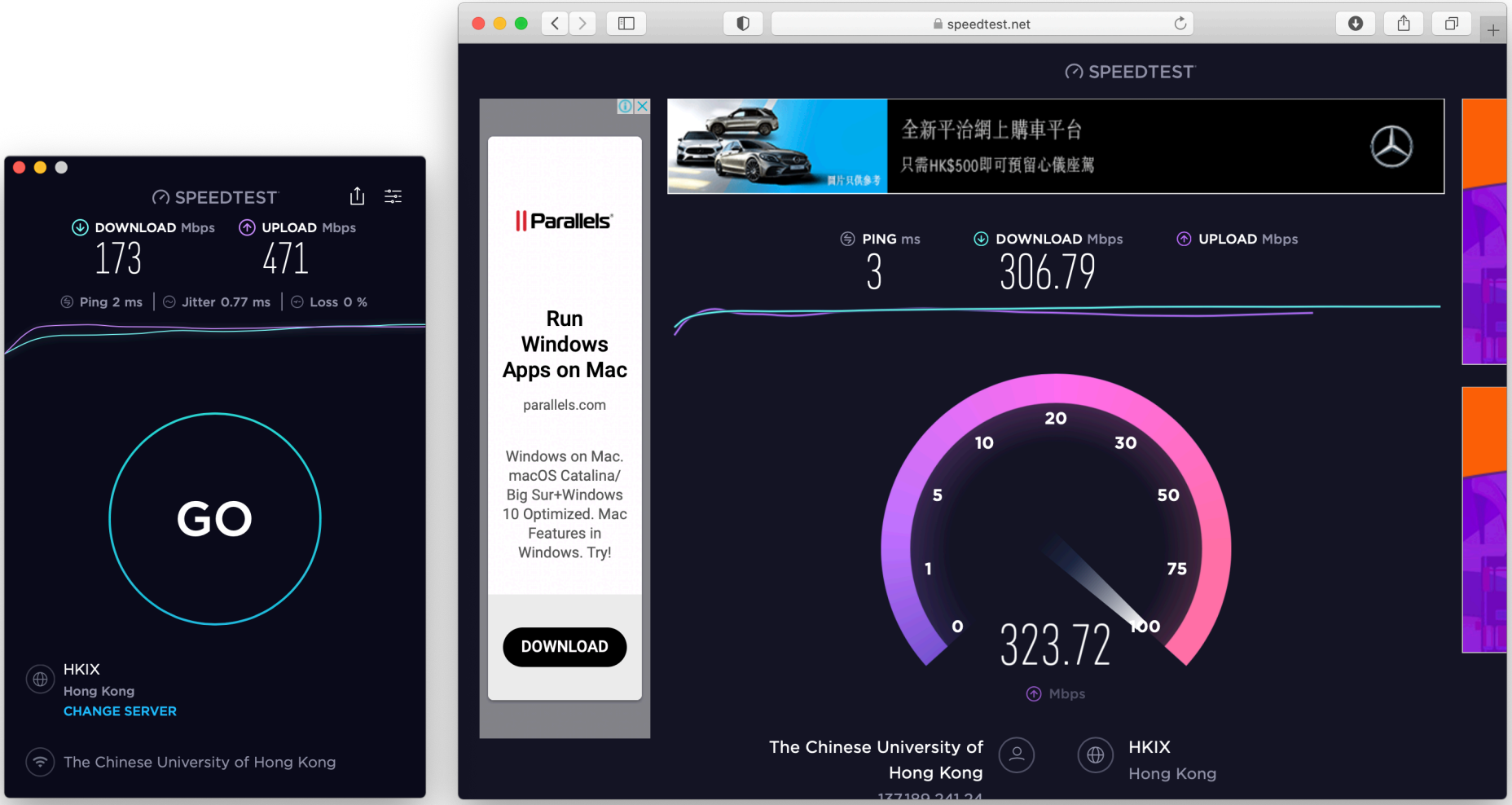
# New features in Customer Portal (2)

## Application Forms:



# Speedtest Servers at HKIX

https://www.speedtest.net/



# HKIX Planned Works for 2020-21

| | | |
|---|---|---|
| HKIX Reseller Program (Phase 2) | New HKIX Core Site | RS1 and RS2 (IPv4) Route Servers upgrade |
| NTP servers for HKIX participants | Implement MANRS IXP Programme for routing security | Implement security operations center (SOC) |

# MANRS IXP Programme

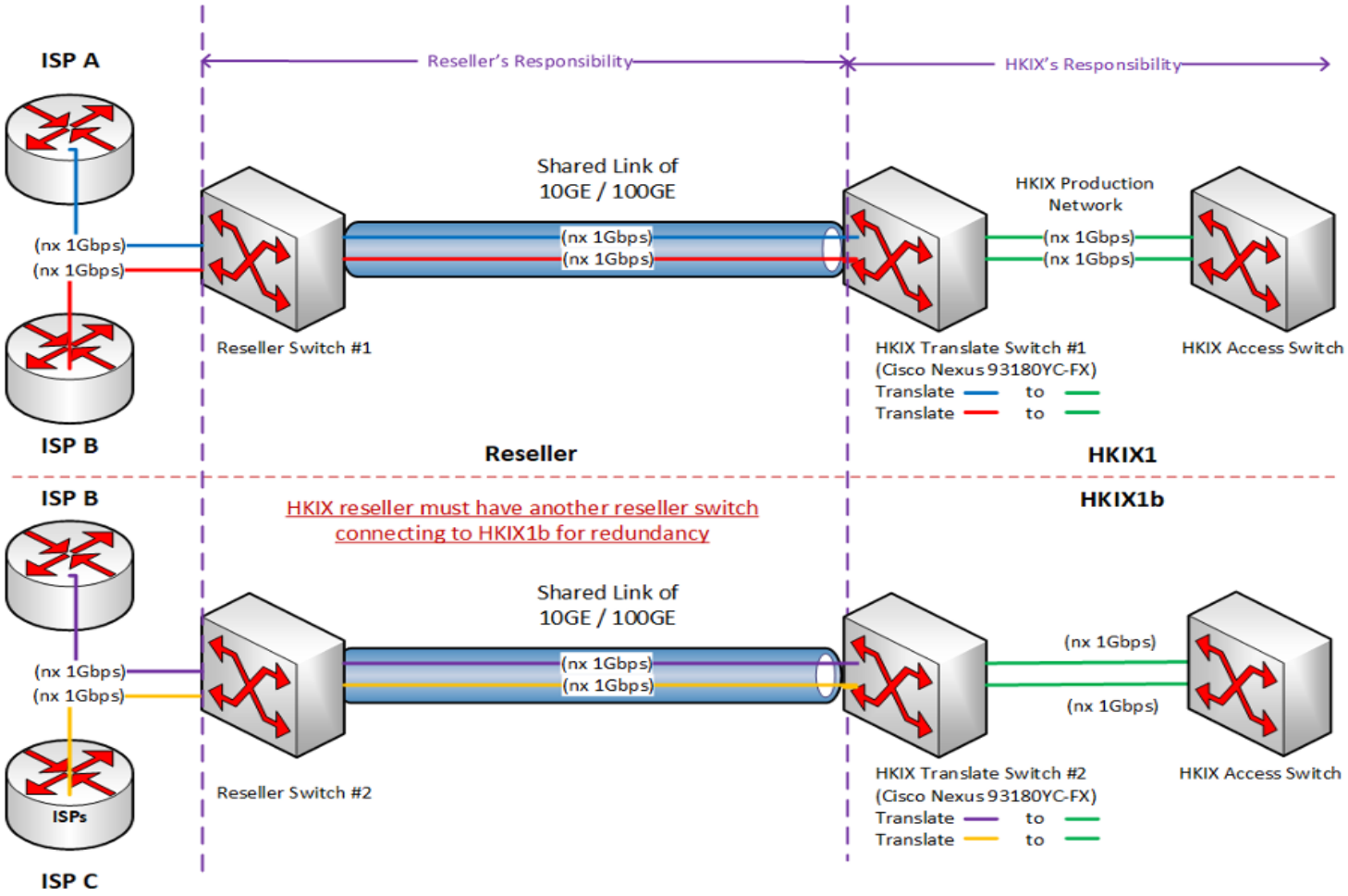
Mutually Agreed Norms for Routing Security (MANRS)

- Action 1: Prevent propagation of incorrect routing information
- Action 2: Promote MANRS to the IXP membership
- Action 3. Protect the peering platform
- Action 4. Facilitate global operational communication and coordination between network operators
- Action 5. Provide monitoring and debugging tools to the members

# HKIX Reseller Program

- Target oversea participants for peering
- Non-exclusive arrangement / resellers can be IXPs, Data Centers, local and regional ISPs
- Phase 1 launched in July 2019 for connecting to Satellite Sites only
- Phase 2 will be implemented in Q4 this year, for connecting all **HKIX Core Sites**
- Application will be opened on 28th September 2020
- If you are interested be one of our resellers, please contact info[@]hkix.net.

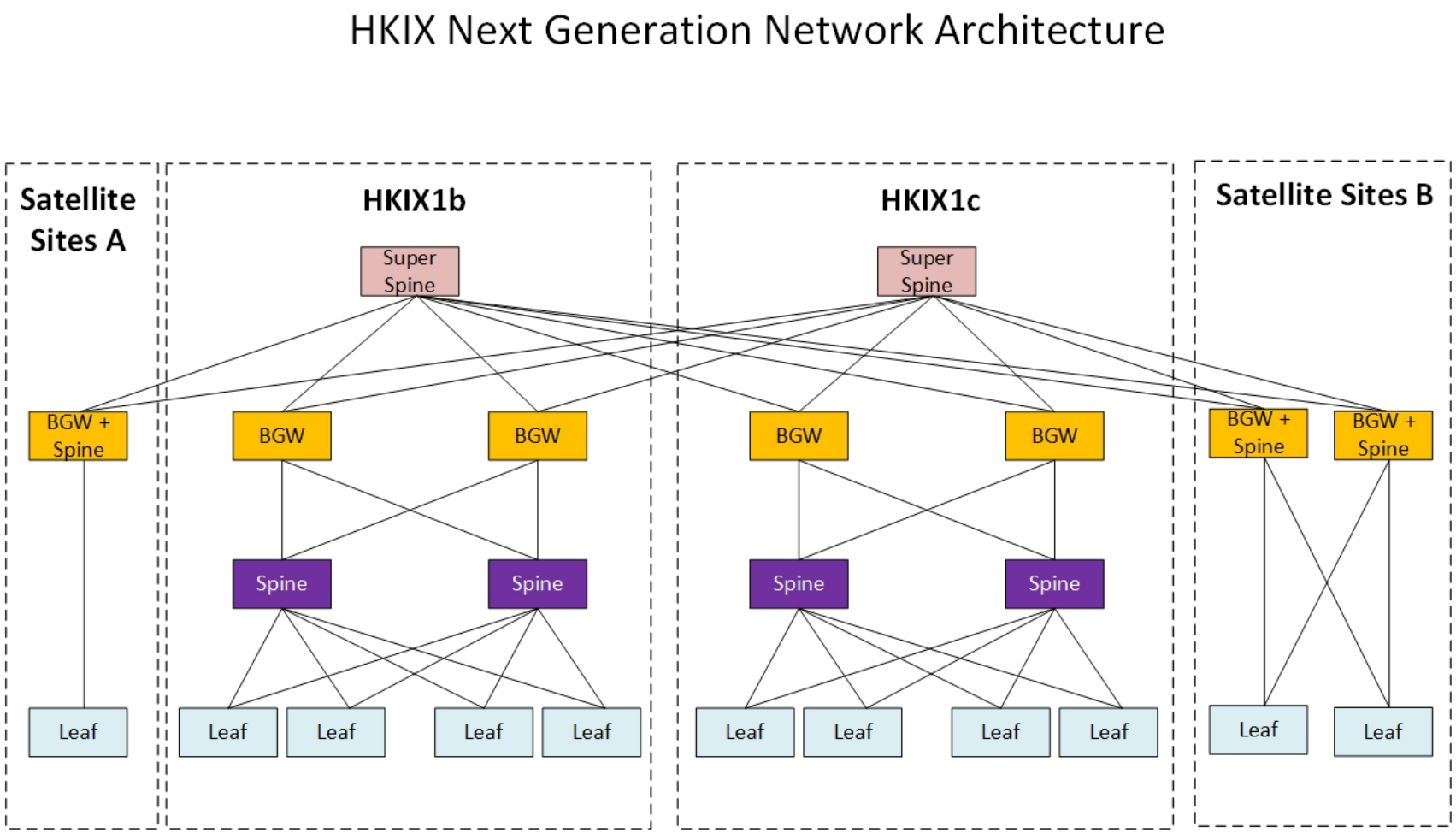
# Reseller Network Topology Diagram



# HKIX New Core Site

- A new HKIX Core site will be established outside CUHK
- Target Q4 2020
- VXLAN EVPN Multi-Site technology
- Support 1/10/100/400 GE
- Super Spine, Border Gateway (BGW) and Local Spine and Leaf switches will be installed in Core Sites
- BGW/Spine and Leaf switches will be installed in Satellite Sites
- Inter-site links will be connected between Super Spine and BGW or BGW/Spine switches

# VXLAN EVPN Multi-Site Architecture



# Thank You!

**For enquiries, please contact us at**

**info [@] hkix.net**