

打造次世代的智慧校園

無線技術新趨勢

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Ruckus -Technical Manager

Smart Living

Smart ID cards

High speed connection

Smart lighting

Smart parking / transit

Wayfinding

Personal networks

Smart Learning

Flexible Learning Spaces

Virtual Labs

Distance Learning

Smart Security

Video surveillance

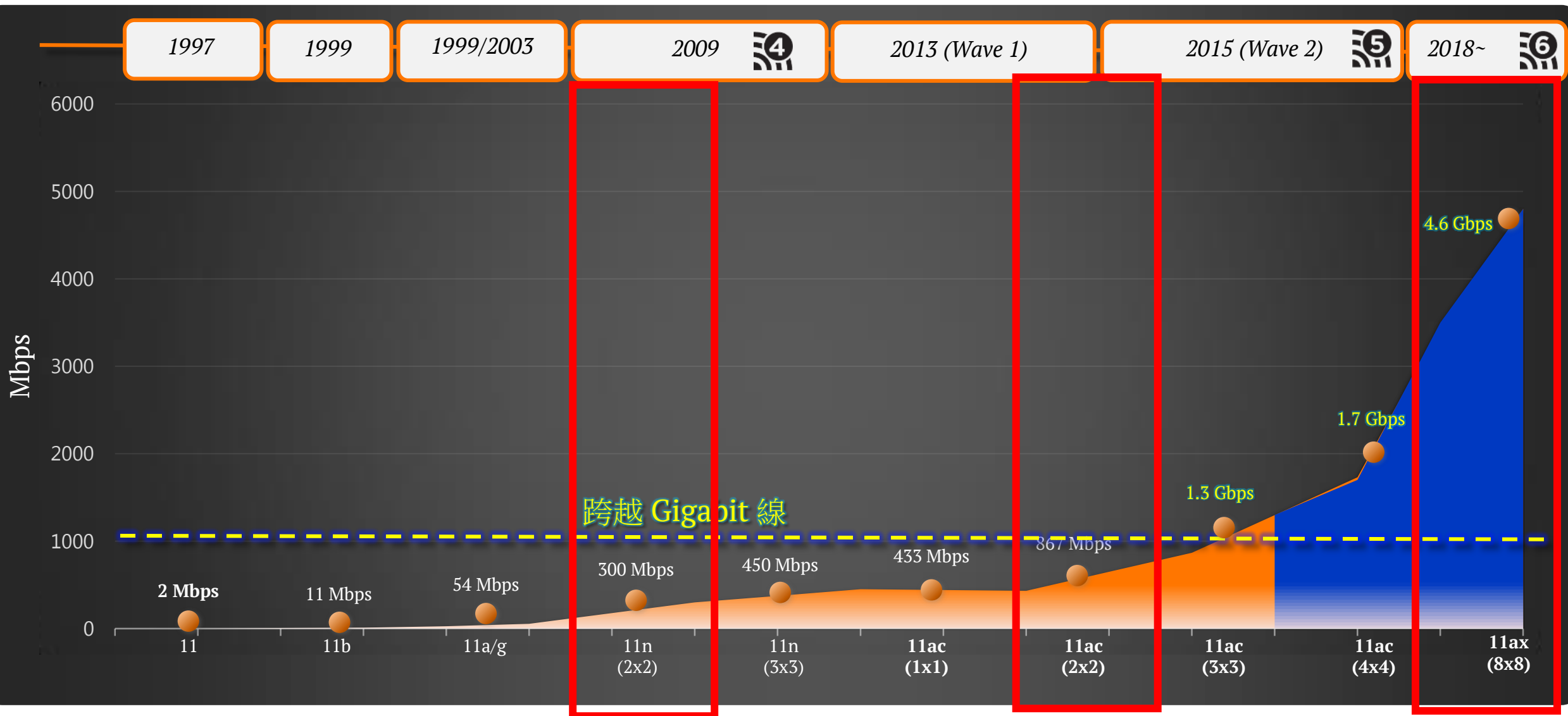
Smart locks and access control

Tracking assets

Tracking people

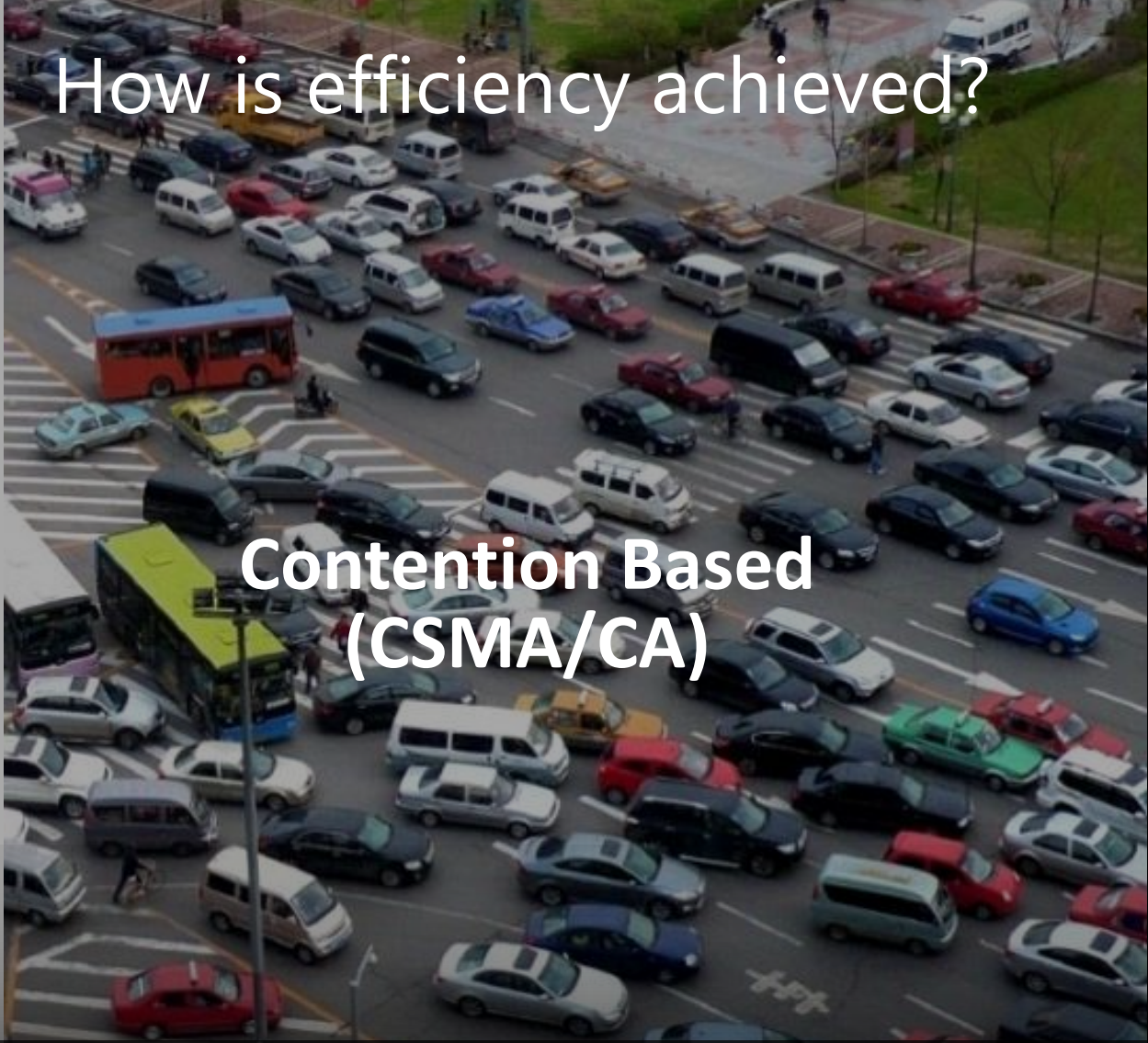
- **Connect to People**
- **Connect to Information**
- **Efficiency**
- **Security**
- **Save Energy**

Wi-Fi 6 – 越來越快的無線傳輸速度



802.11ax – 不僅是速度的提升 專為高效能、高密度及大量IoT連線設備所設計





How is efficiency achieved?

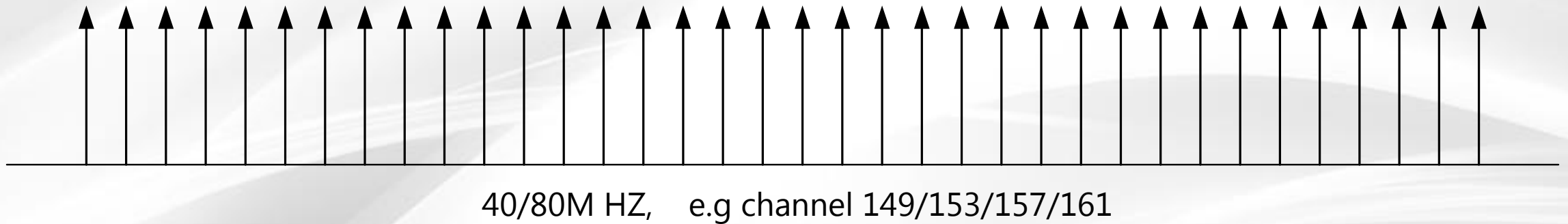
Contention Based
(CSMA/CA)

Wi-Fi 5 (11ac)

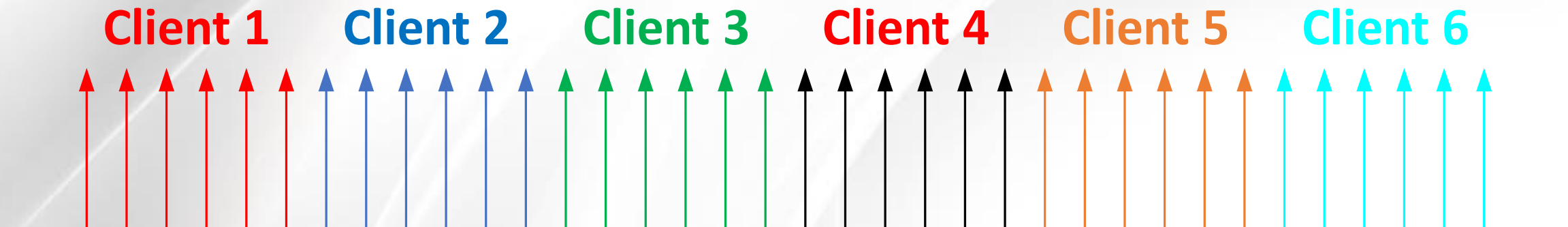
OFDM vs. OFDMA (802.11ax) – 較佳的頻譜利用率

Wi-Fi 5 OFDM in 802.11ac

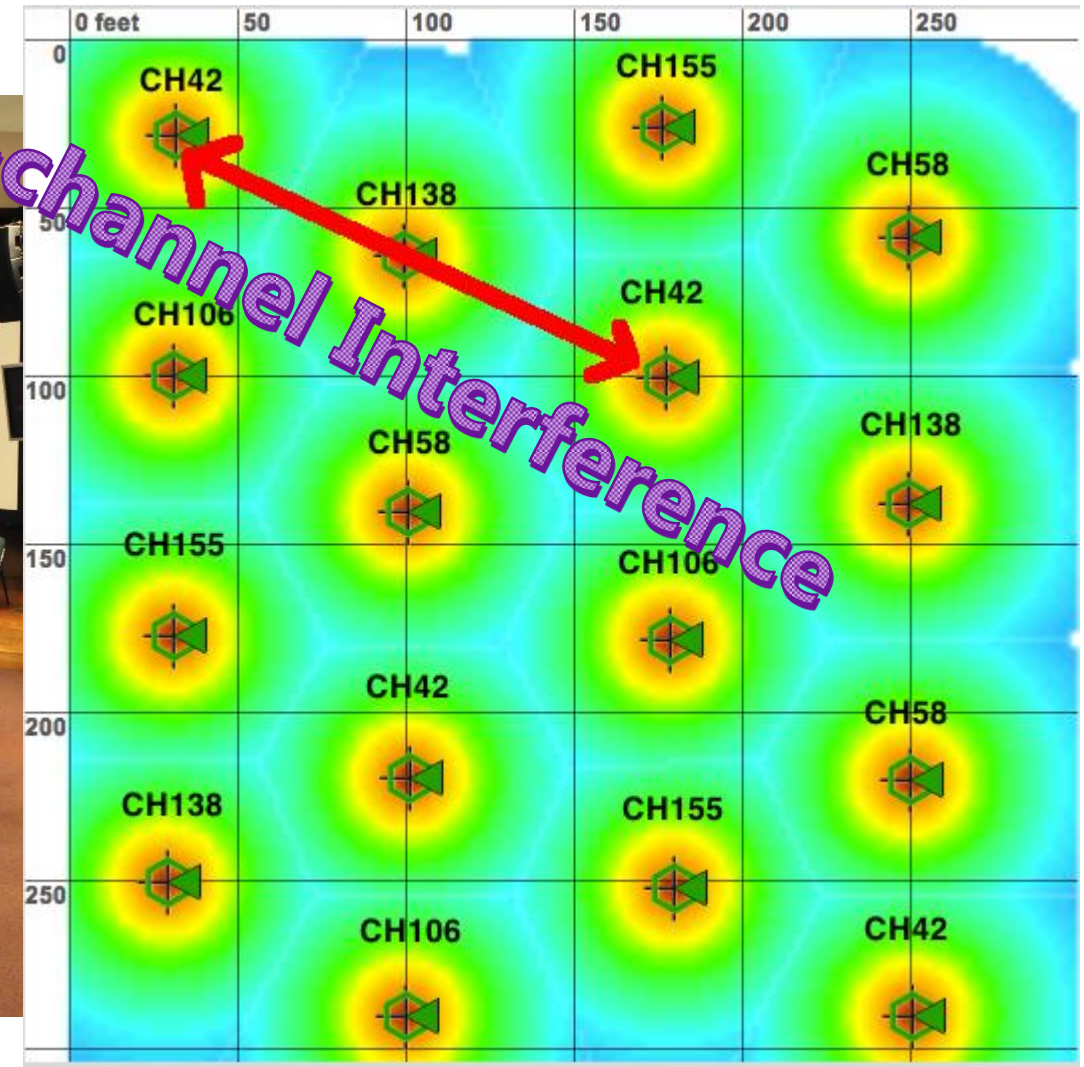
All Tones Assigned to Single Client



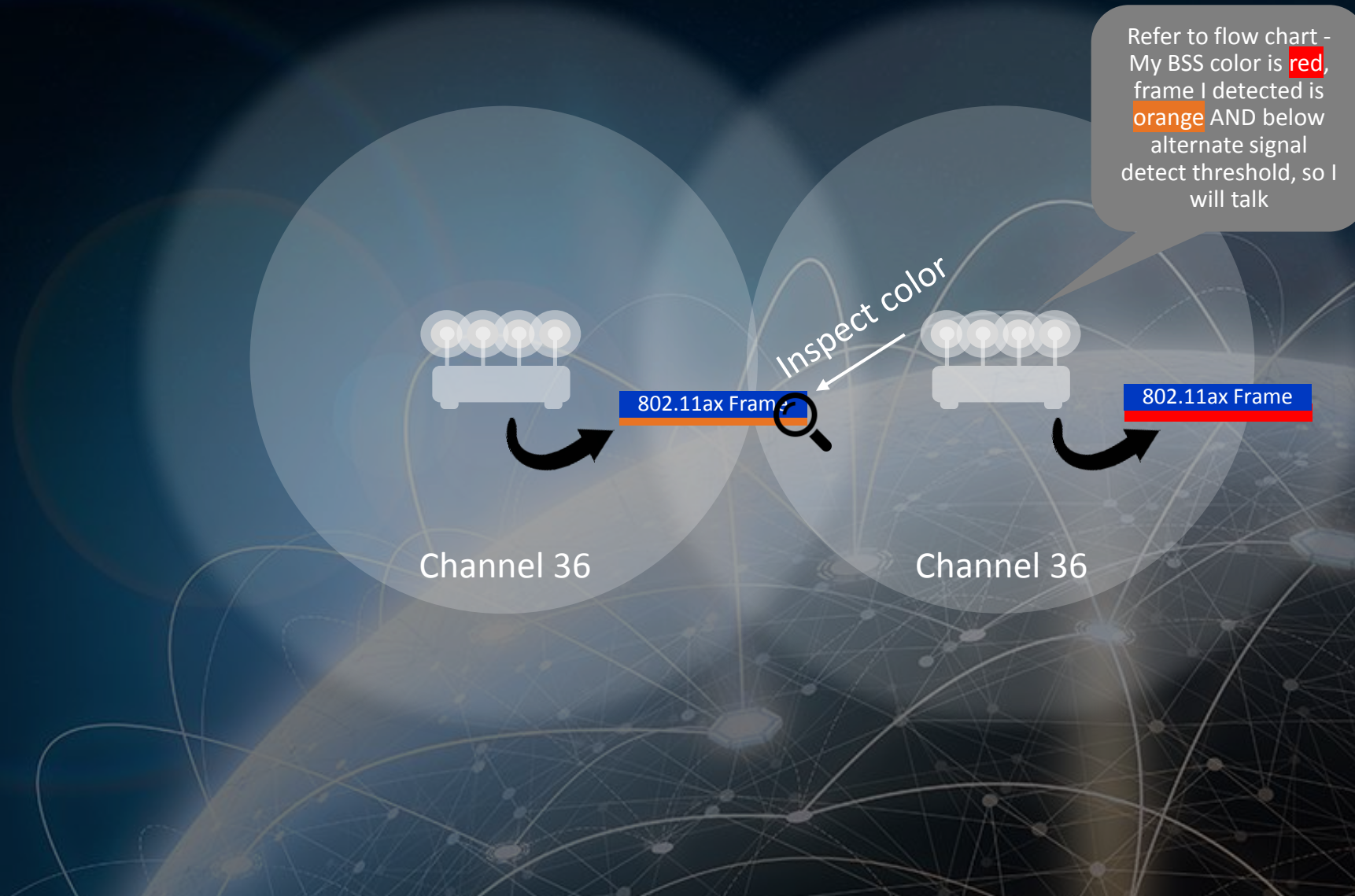
Wi-Fi 6 OFDMA (Resource Units RU)



大型演講廳 – High density and high ceiling



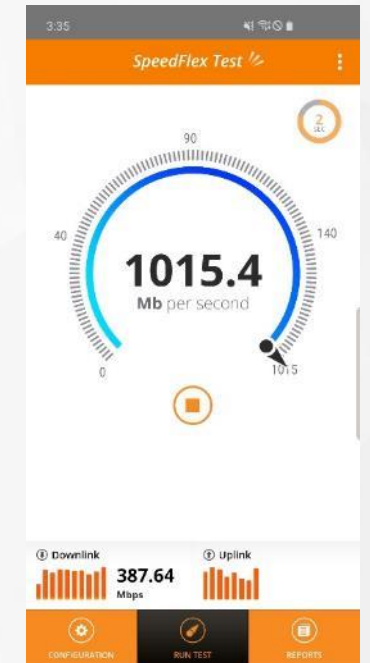
BSS Coloring - High Density



R730 – 8x8 802.11ax Wi-Fi AP

Highlights

- Dual band concurrent access point
- 2.4 GHz radio: 4x4:4 802.11b/g/n/ax
 - 1148 Mbps max PHY rate
- 5 GHz radio: **8x8:8** 802.11a/n/ac/ax
 - 4800 Mbps max PHY rate
- Multi-User MIMO / OFDMA
- 160 / 80+80 MHz channel support
- **BeamFlex+ adaptive antennas** with Polarization Diversity (PD-MRC)
 - 高干擾 (High Interference)
 - 高密度 (High density)
 - Transient Client Management路過用戶端管理
- Up to 1024 client associations
- IoT Ready: BLE & Zigbee
- **WPA3 ready**
- 1x 1/2.5/**5Gbps** and 1x 10/100/1000 Mbps Ethernet Ports



Samsung S10

Ruckus E510 (智慧路燈)

Modular Embedded Access Point for Outdoor Smart Lighting , Lamp pole Lighting, Smart Cities

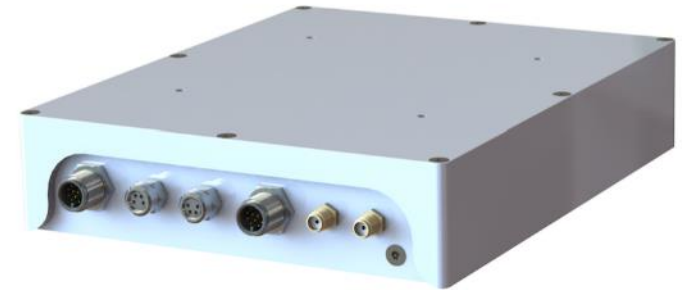


Highlights

- Dual band concurrent access point
- 2.4 GHz radio: 2x2:2 802.11b/g/n
 - 400 Mbps max PHY rate
- 5 GHz radio: 2x2:2 802.11a/n/ac Wave 2
 - 866 Mbps max PHY rate
- Field-accessible USB Port for IoT radios e.g
- Up to 512 client associations
- IP67 Outdoor Rating
- -40 to +70C Operating temperature
- Rail certified EN 50155
- Embeddable form-factor



+





1. Video cam – AI to analyze people
2. BLE/WIFI
3. Temp., humid, wind speed
4. Smart LED
5. Geo-QR code
6. RFID Cane navigation

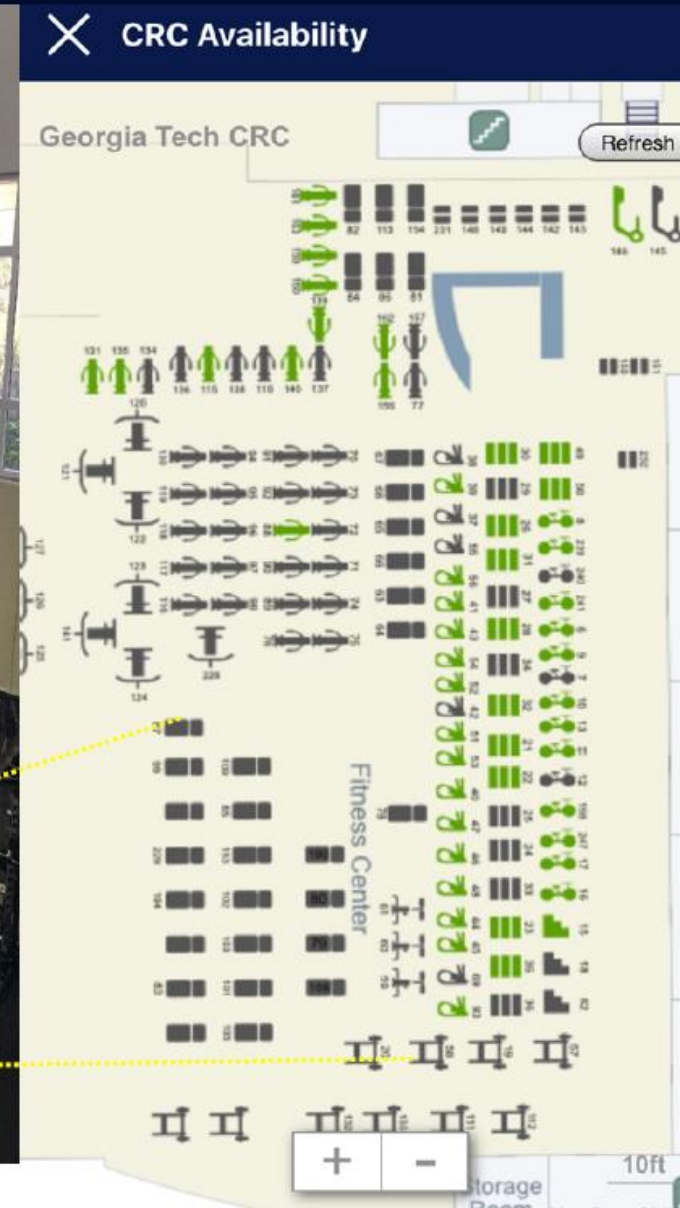
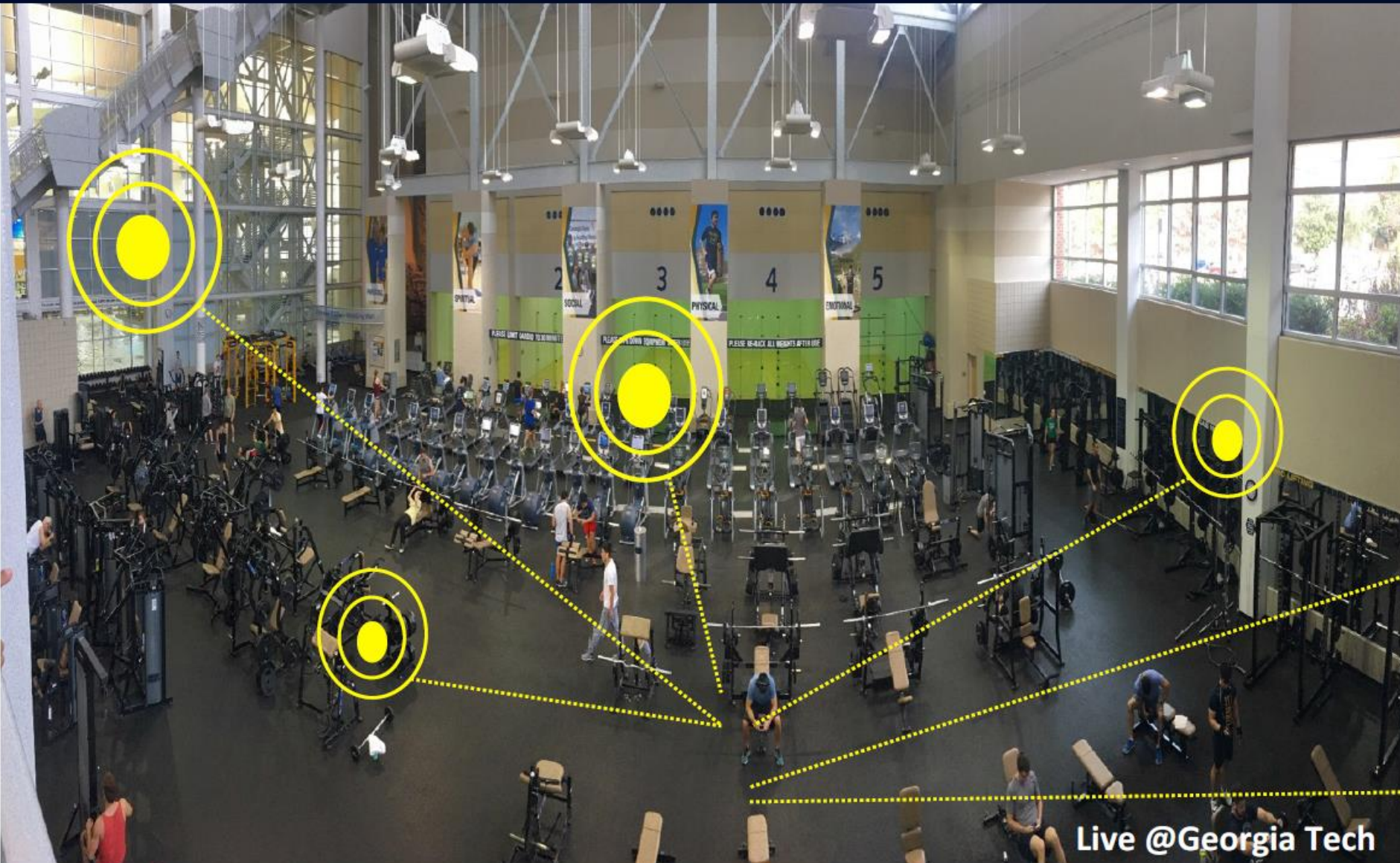


E510



各式各樣的物聯網設備需要連接
你所需要的不僅是單一Wi-Fi網路所能滿足

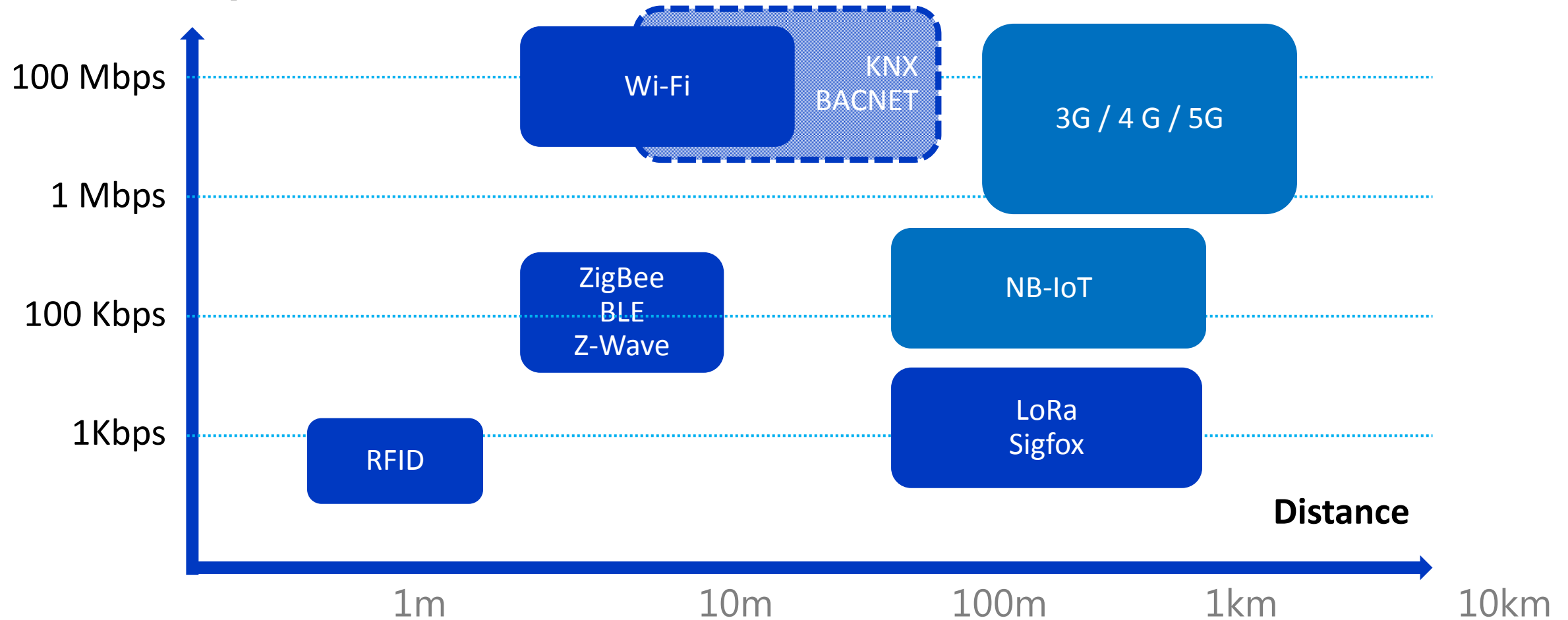
1. Smart Spaces - IoT network deployed in the Campus Recreation Centre delivers real time visibility and availability of equipment and space to both students and staff.



各式各樣的IoT連網技術

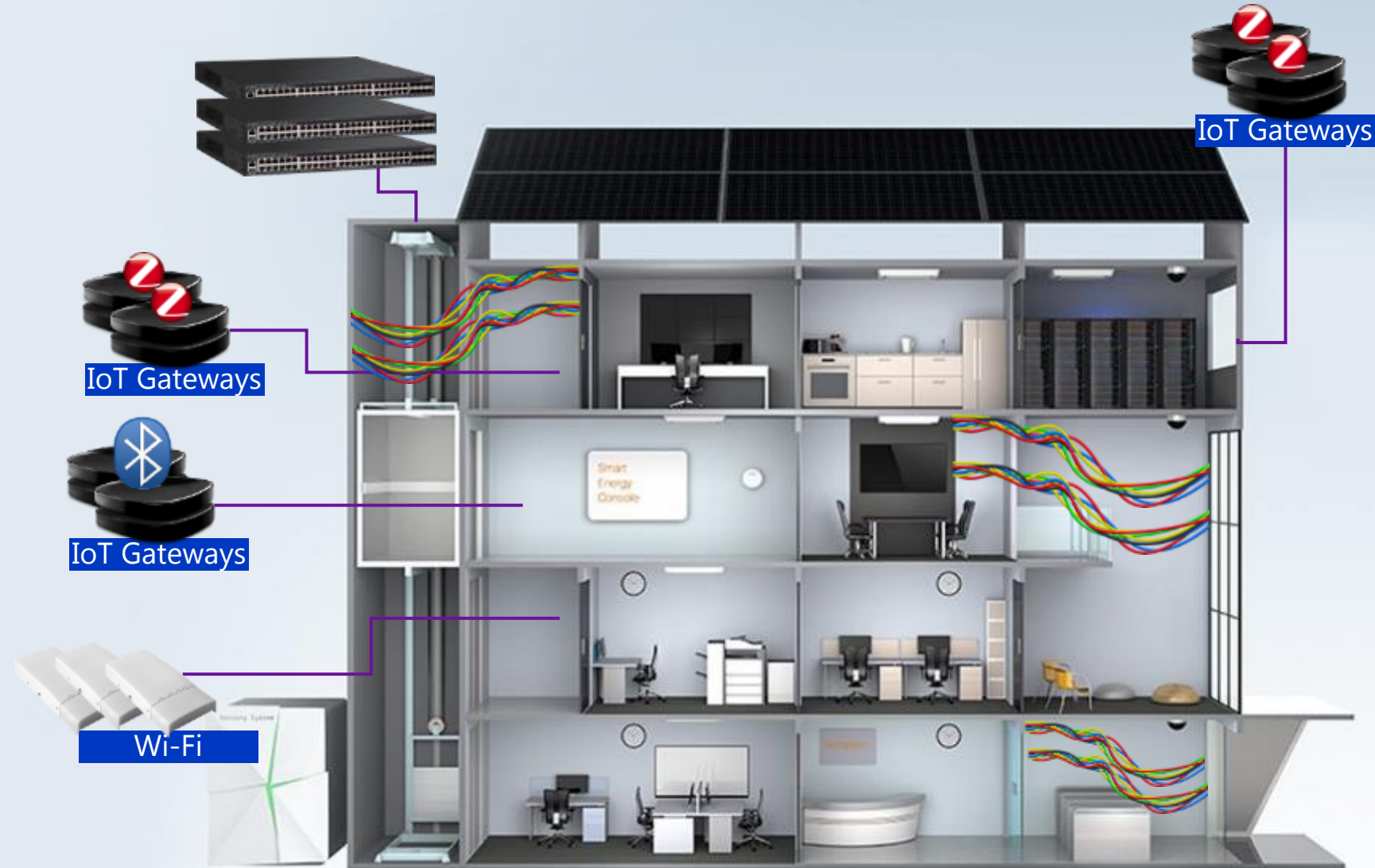
Data Rate

Power Consumption

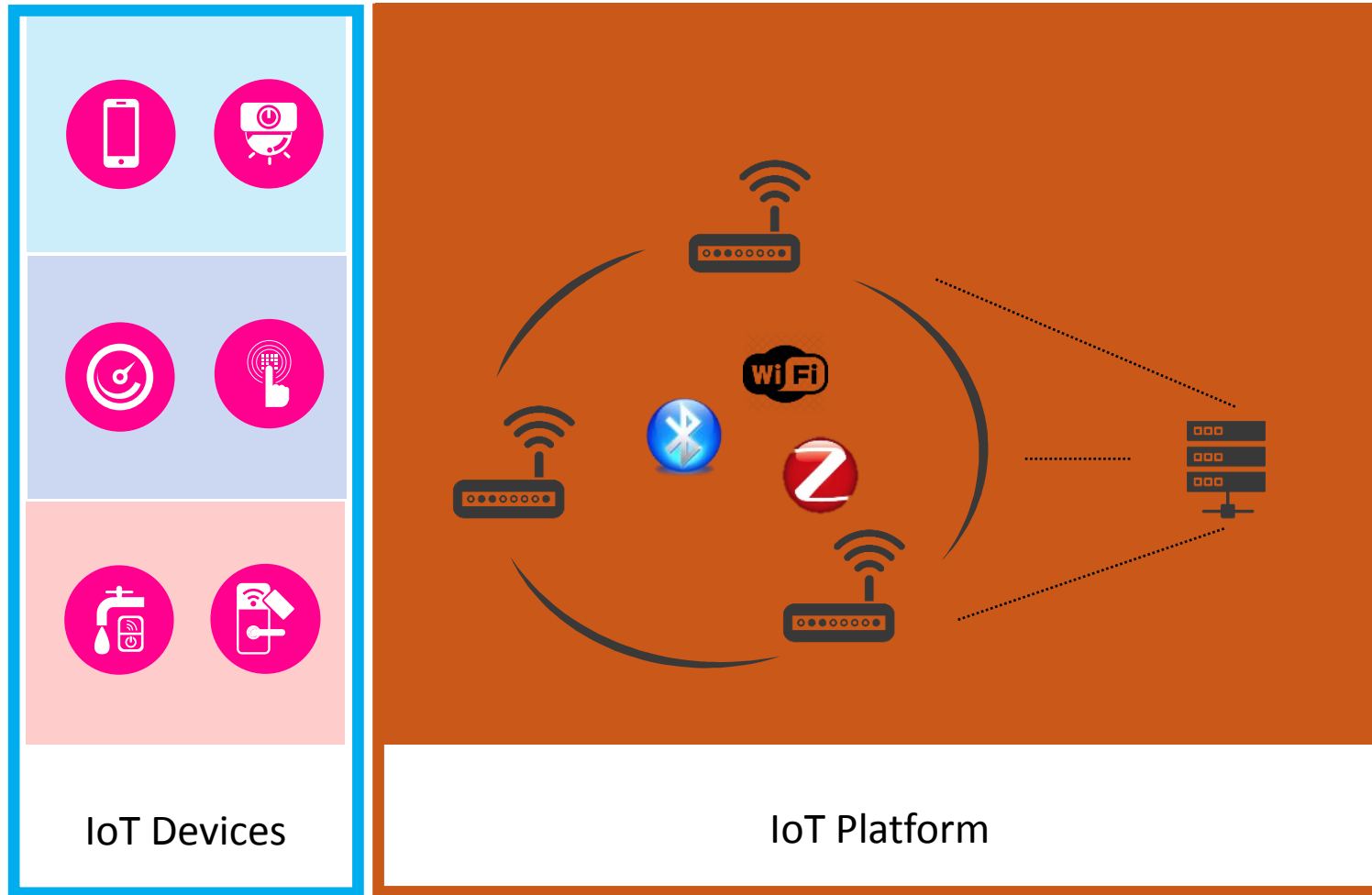


各自獨立架構需要重覆投資設備

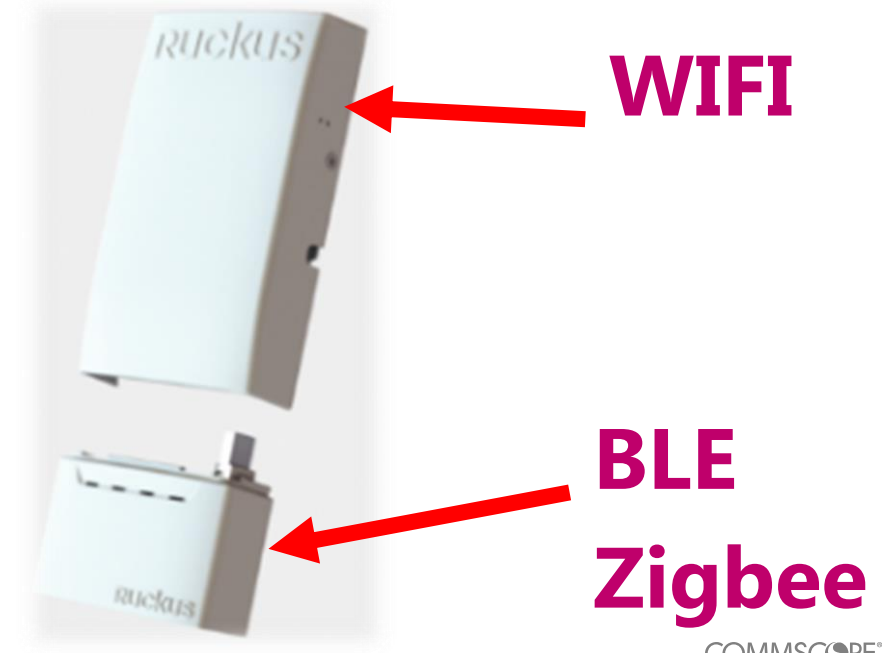
- Separate IoT gateways
- More switches
- More cabling
- Separate security
- High costs = questionable ROI



整合IoT存取網路



- IoT Enabled Wi-Fi Access Points
- Reduced Physical Infrastructure
 - Less switches, switch ports, cables
- Single Network Management



整合架構簡化網路

- IoT-enabled AP (WiFi + IoT)
- Fewer switches
- Less cabling
- Unified security



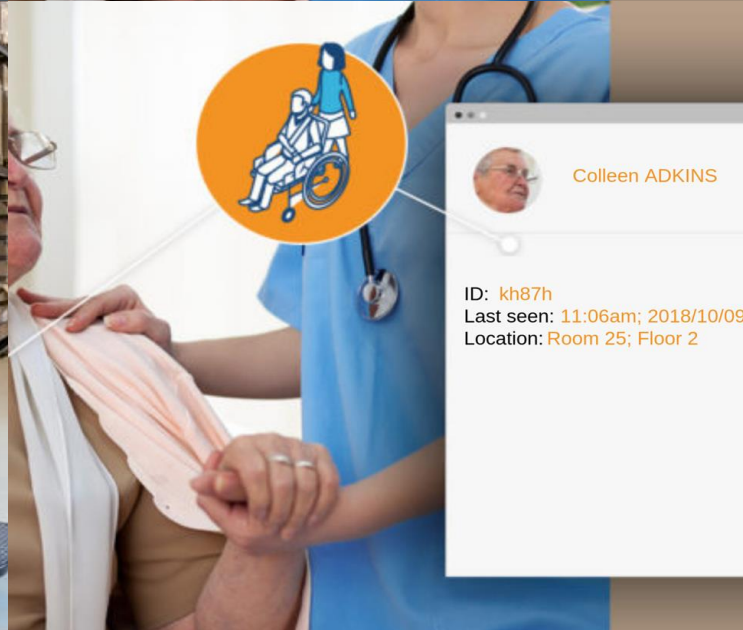
...Enabling a Single, Converged IoT Access Network.

定位服務

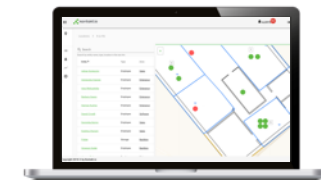
Asset Tracking 資產追蹤



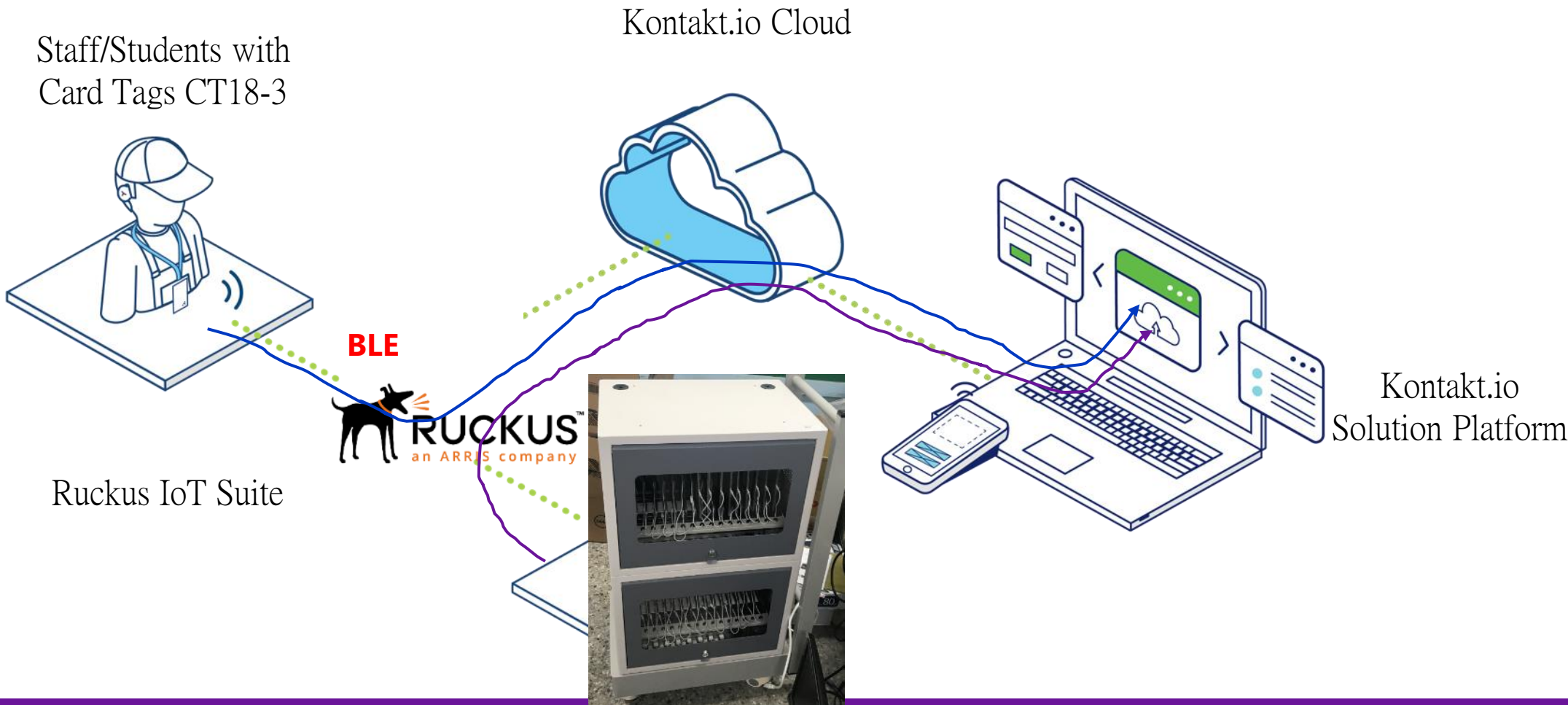
Geofencing 地理圍欄



Condition Monitoring 狀態監測

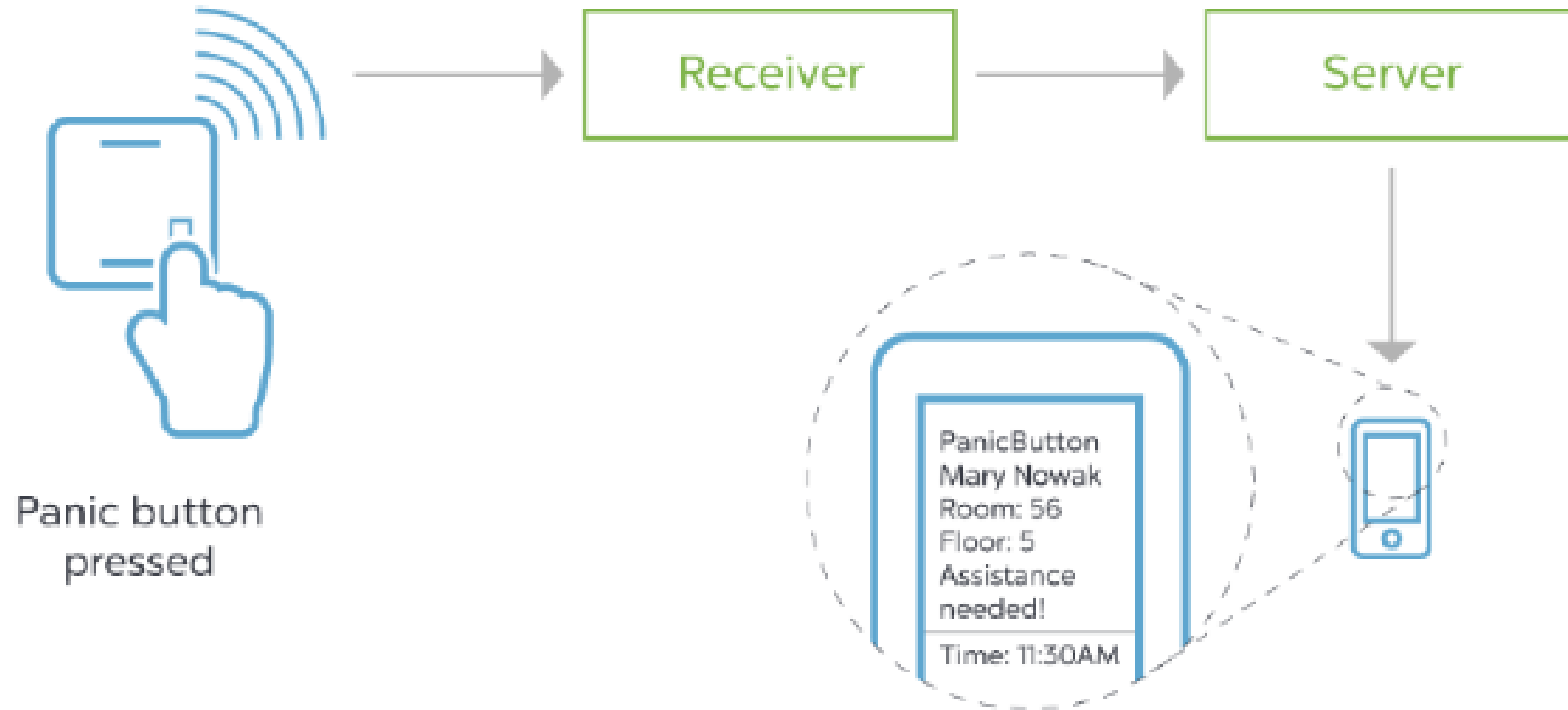


Kontakt.io & Ruckus



Simple, Integrated Location Solutions

定位與緊急按鈕



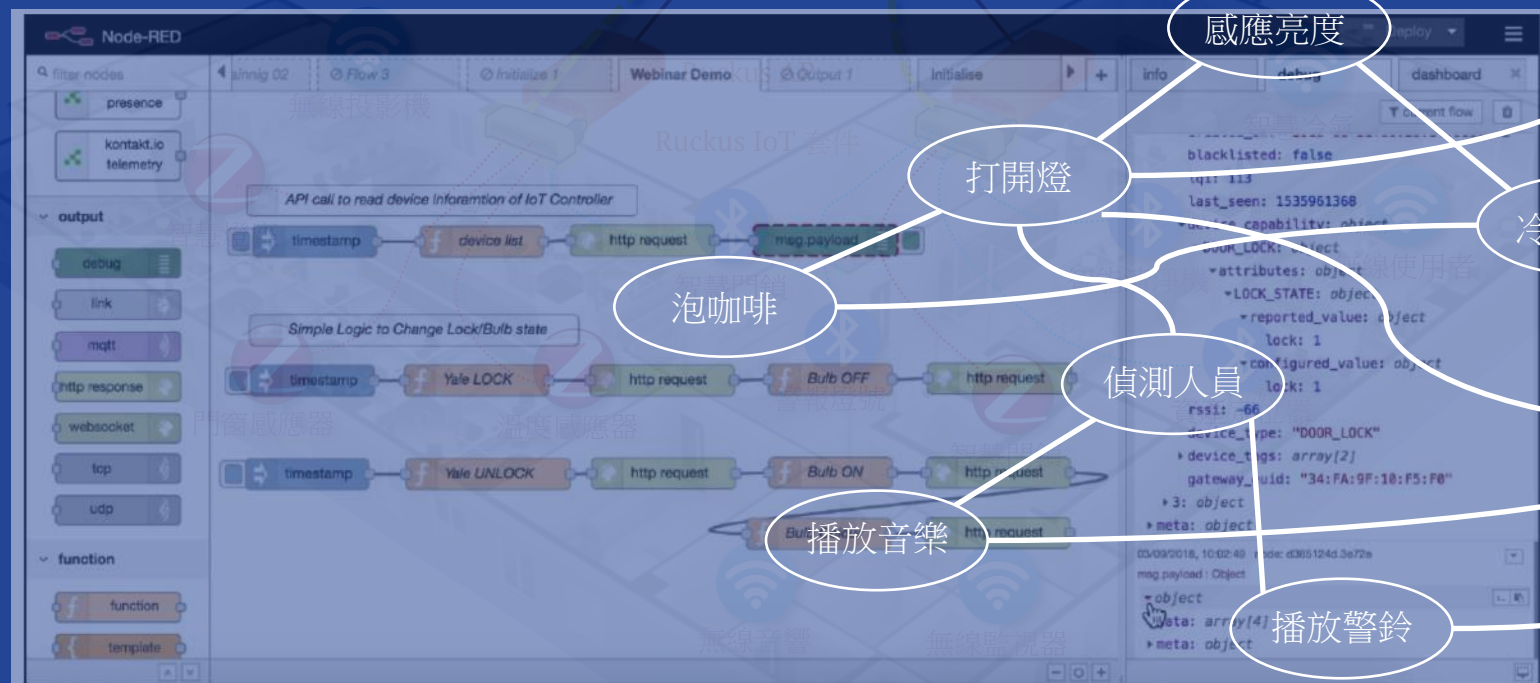
整合平台串連全新SMART CAMPUS

Ruckus 無線控制器

網路骨幹

Ruckus IoT 控制器

軟體定義自動化感應與控制



感應亮度

開門

會議排程

啟動供電

偵測溫度

冷氣溫控

偵測耗電

倉儲管理

打開燈

泡咖啡

偵測人員

播放音樂

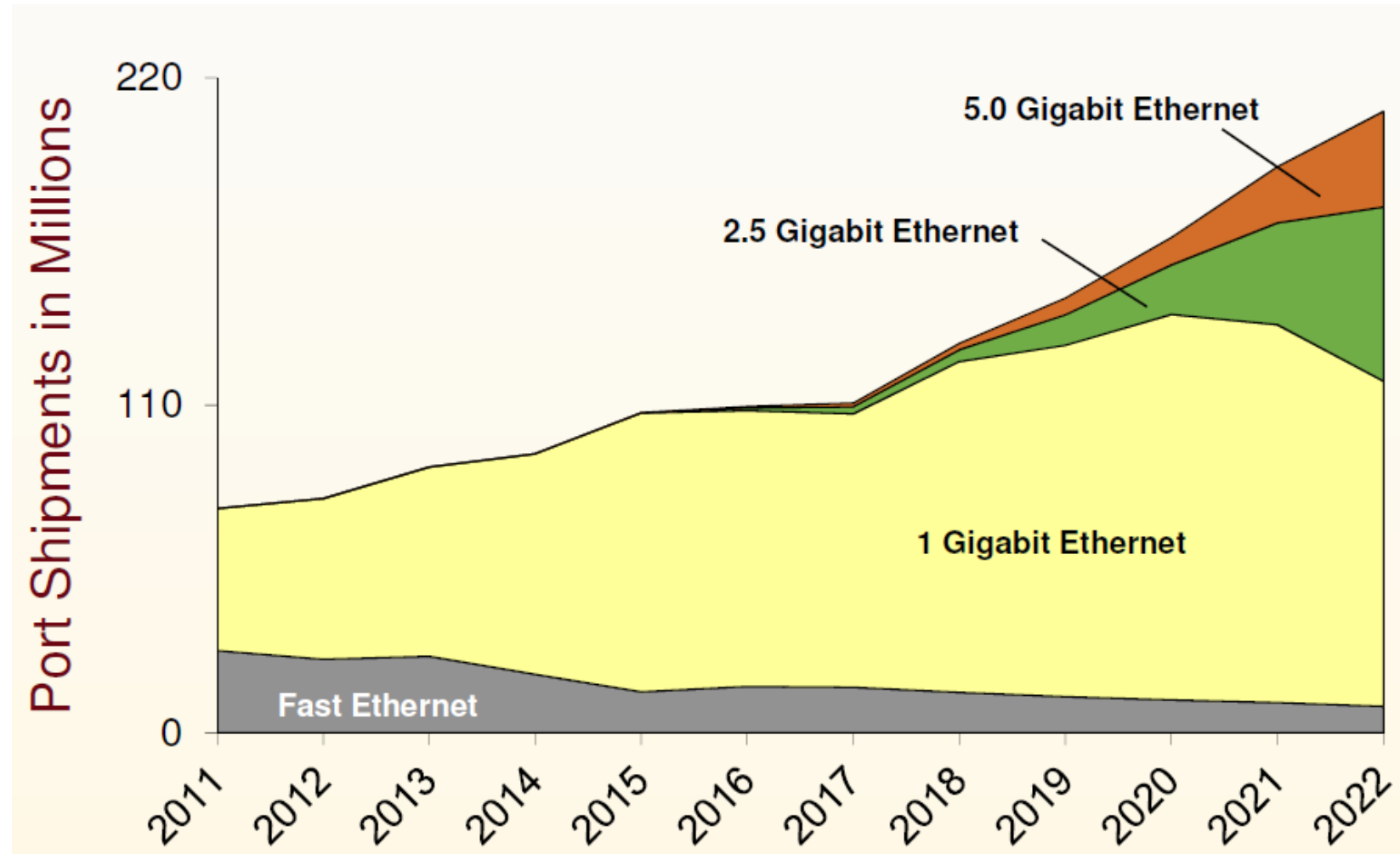
播放警鈴

Wi-Fi 6及IoT應用推動Multigigabit介面需求

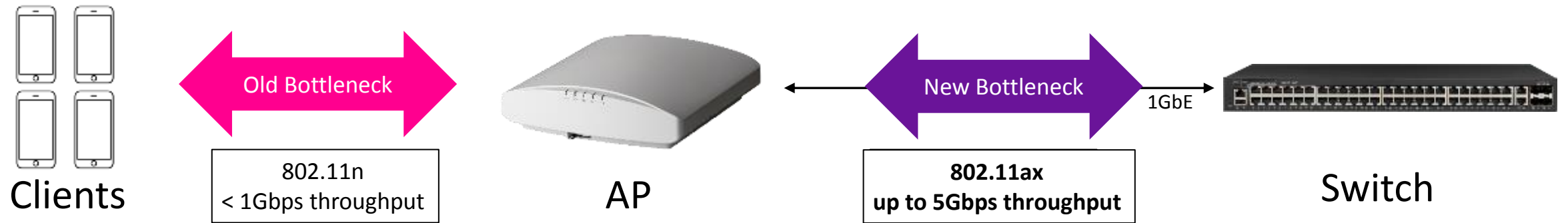
Transition to Multigigabit Ethernet has started

2.5/5 GbE switches are expected to grow from 4M to 45M units between 2017 and 2022.

802.11ax will drive Multigigabit Ethernet growth



網路瓶頸點改變了



越來越多的高電力應用需求

Standard	Power at Switch	802.11a/n	802.11ac	802.11ax and beyond	Other Powered Devices
PoE 802.3af	15W				
PoE+ 802.3at	30W				
PoE++ 802.3bt	60W (4-pair)				
High-Power 802.3bt	90W (4-pair)				 

Ruckus SZ 單一管理, 有線無線整合方案

ICX 7150 Z 系列 交換器



- 合理的 Multi-Gigabit 市場領導解決方案
- 完美推動 60w (PoH / UPoE) / 90w(.3bt) 供電需求

2.5 GbE + 33.5W PoH

802.11ac W2
1,733Mbps + 800Mbps



ICX 7650 Z 系列 交換器



5 GbE + 31W PoH

802.11ax
4.8Gbps + 1.15Gps



Hybrid Solution of Fiber to the classroom

100G/40G/10G Core Switch

Internet

TV Room



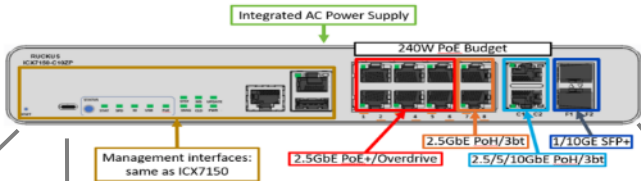
High Bandwidth location 10G Fiber Ball room/ Restaurants / Guest Area

Cost Effective 1G/10G Fiber to Guest Floor / Guestroom

802.11ac wave 2 / ax WIFI
Pan Tilt HD CCTV at corridors
Multicast Video Streaming
4K Video

Internal Server

Up to 4.8G WIFI
4K Camera Source
Digital Signage
Power up Pan Tilt HD CCTV
4K Video LCD Display



Support 70 HD Video Streaming



4K Video



NO Power Cabling for Signage



簡化您的網路



Pay as you growth
Stacking to increase the port density,
just like adding a line card

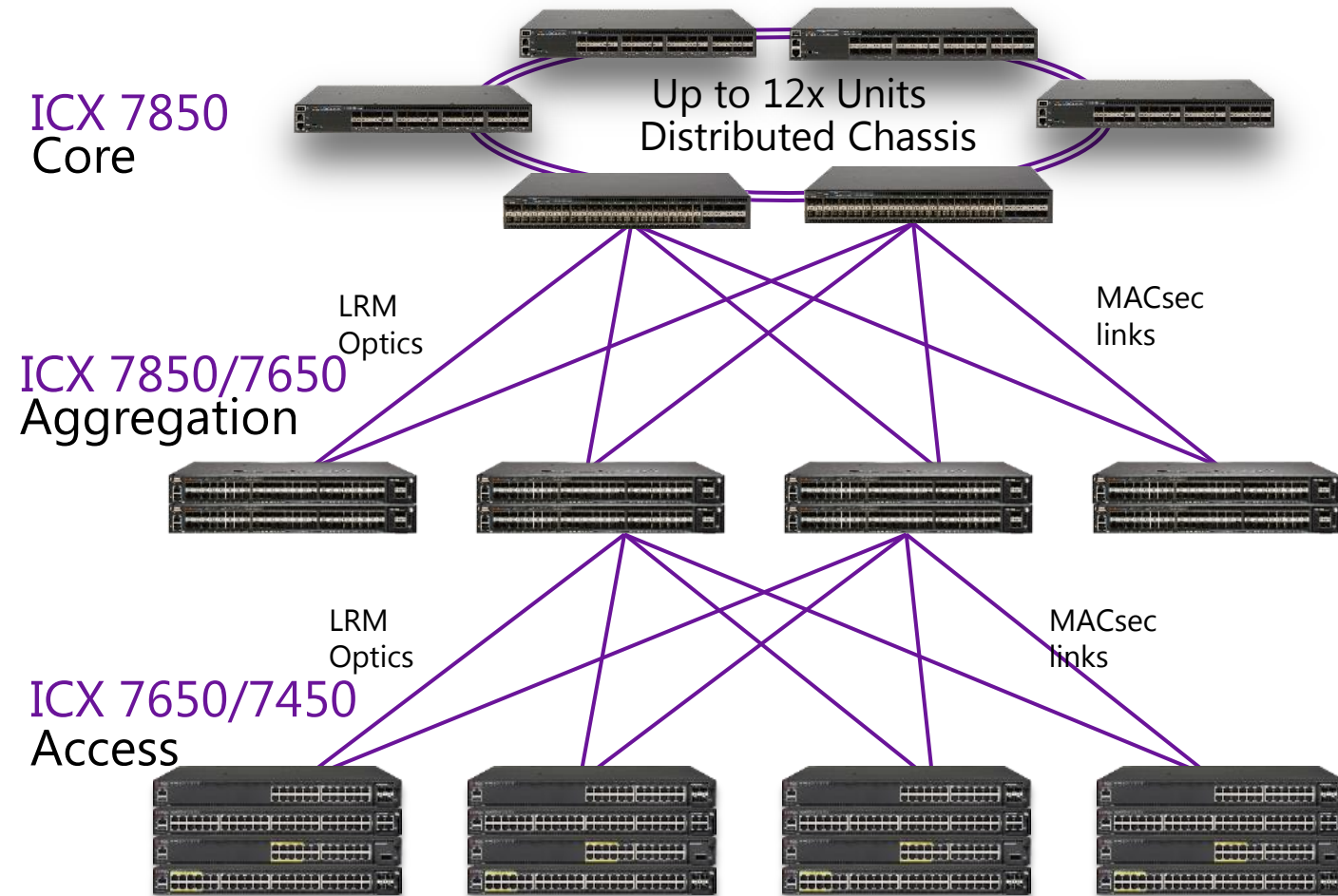
7850-32Q/ 48F



Go Green !!!

- Save Rack Space – 12 U => 1U
- 1U provides 128 10G/25G port
- Save Power

彈性擴充的100G網路



- **Scalability** : Stacking up to 12 units delivers 76.8 Tbps of combined switching capacity at the core.
- **Security**: 256 bit MACsec delivers advanced L2 security
- **Deployment Flexibility**: LRM optics delivers 10 GbE speed on OM1/OM2 fiber For customers with legacy fiber cables in their walls



1G免費升速 **10G** Ruckus ICX 7150系列

加速不加價!!

活動時間：即日起至2019/9/30

請立即洽詢鉅立資訊業務團隊

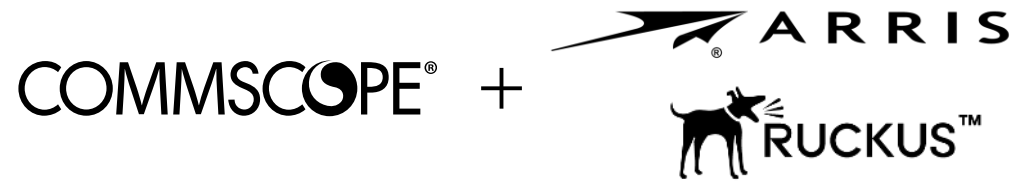
台北：02-77338855 | 台中：04-37046896

產品特點：

勝 提供2-4埠 10Gbps SPF+ 連接埠	勝 堆疊最大支援 12台交換器	勝 支援10Km 遠距離堆疊	勝 提供完整 Layer3功能 (OSPF 、 VRRP 、 PIM 、 PBR)
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適用型號：

- ICX7150-C12P-2X1G
- ICX7150-48-4X1G
- ICX7150-24-4X1G
- ICX7150-24P-4X1G
- ICX7150-48P-4X1G
- ICX7150-48PF-4X1G
- ICX7150-48ZP-E2X10G



Thank You

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