

無線網路建置解決方案



ARUBATM
The **Mobile Edge** Company

Aruba Networks 公司簡介



ARUBA

- 成立時間 2002年2月
- 狀態 非公開發行，預計明年3月IPO
- 資金 \$8億4千萬美金
- 創投 Matrix, Sequoia, Trinity, WK Technology Fund
- 創新產品 Mobility Controllers (意即無線網路交換器)
- 客戶數 超過1200個客戶
- 員工數 200人以上
- 主要市場 Wireless, Security and Mobility

Aruba 管理階層介紹

Dominic Orr

President and CEO

- Nortel Networks
- Alteon
- Bay Networks
- HP



Don LeBeau

Chairman of the Board

- Cisco Systems
- Wang
- Data General
- IBM



Pankaj Manglik

*Co-Founder and
VP, Product Mgmt.*

- Alteon
- Cisco
- Instel



Duston Williams

CFO

- Rhapsody
- Western Digital



Merv Andrade

CTO

- Cisco
- Bombay Stock Ex



Dave Butler

VP, Sales

- FORE Systems



Keerti Melkote

*Co-Founder and
VP, Marketing*

- Nortel/Shasta
- Tahoe Networks
- Cisco
- Intel

Aruba Mobility Controllers

Aruba Mobility Controller



WLAN Switch 架構的先驅

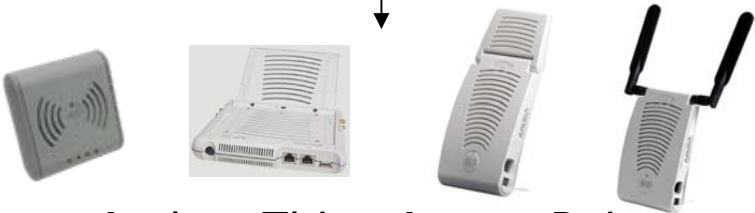
容易建置

可靠度

安全

容易管理

管理	認證	授權
加密	漫遊	VLAN
802.11a/b/g		天線



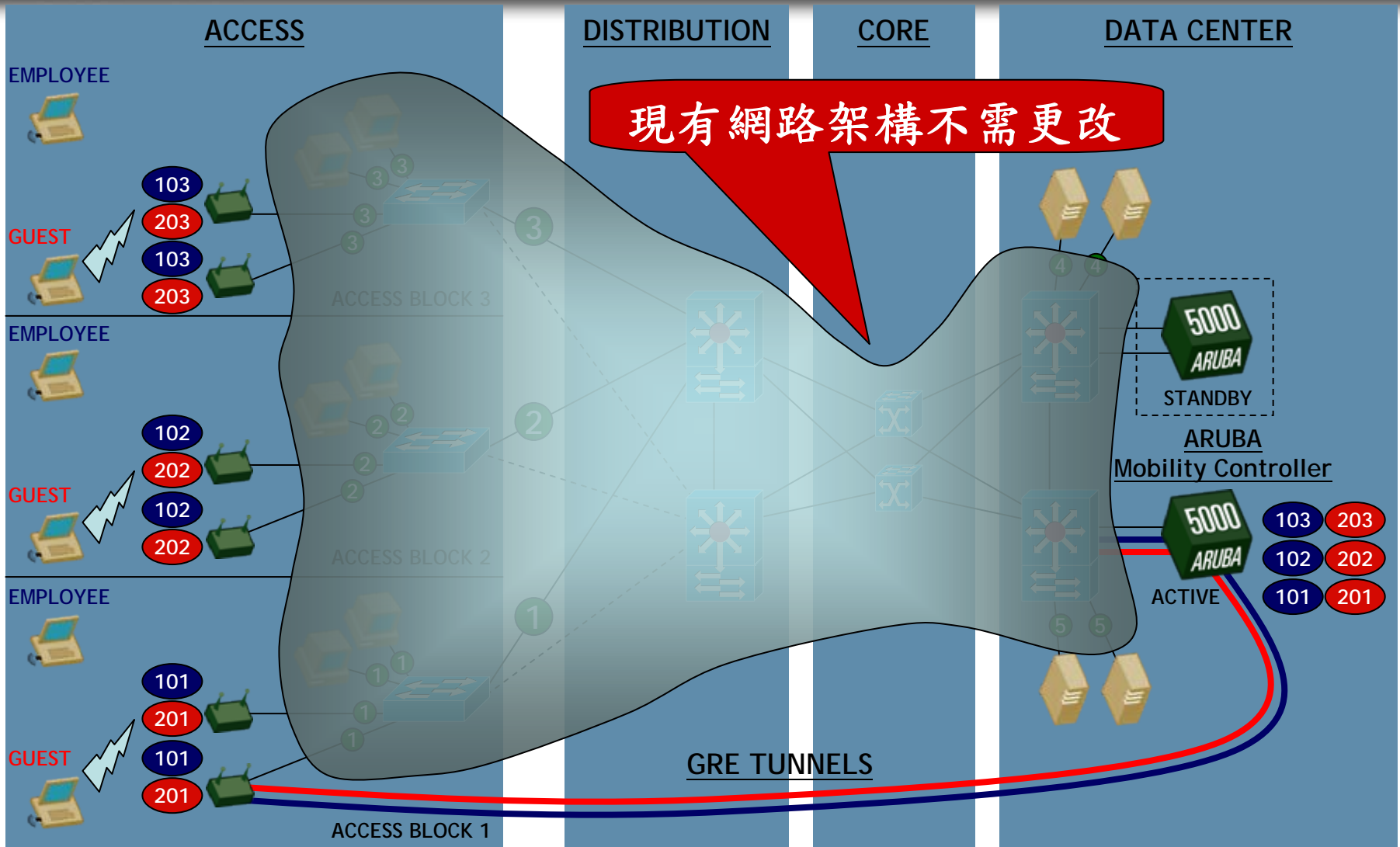
Aruba "Thin" Access Points

容易建置



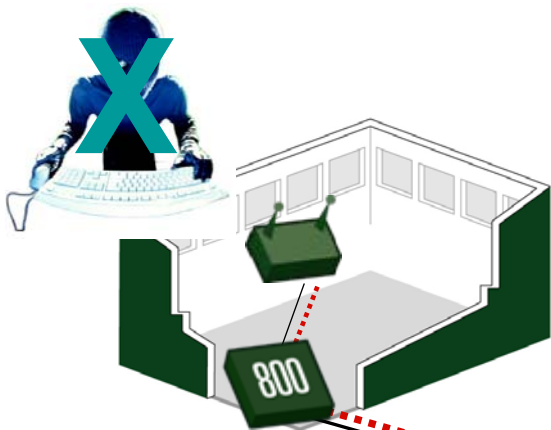
ARUBATM
The **Mobile Edge** Company

ARUBA Thin AP 集中式 Mobility Controller AP可以佈置在任何角落-不需更改現有架構)

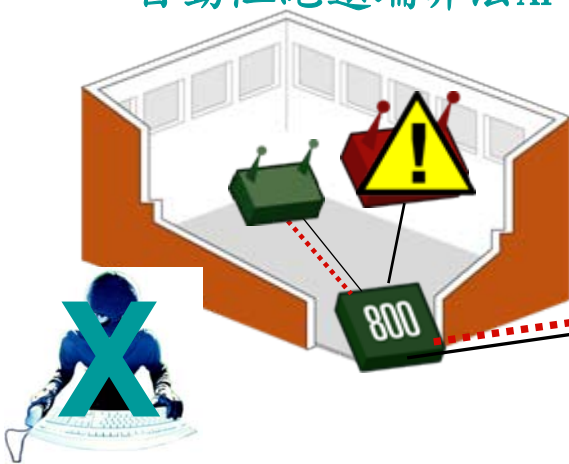


即使是分支機構也是統一控管 擴充容易不需重新設定Mobility Controller及AP

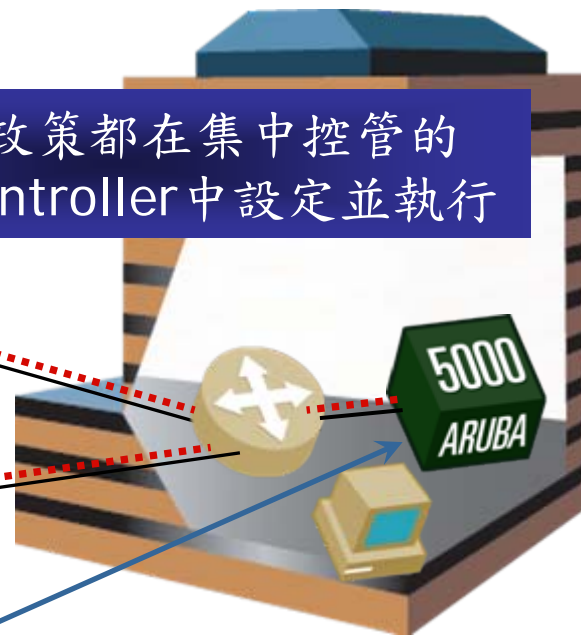
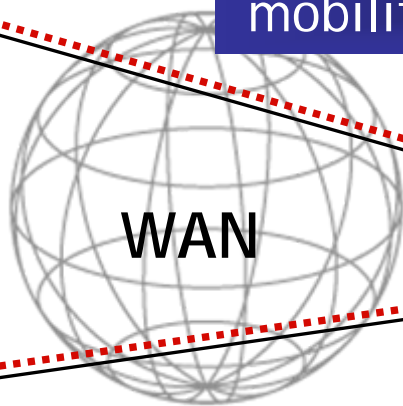
自動阻絕遠端無線網路駭客攻擊



自動阻絕遠端非法AP

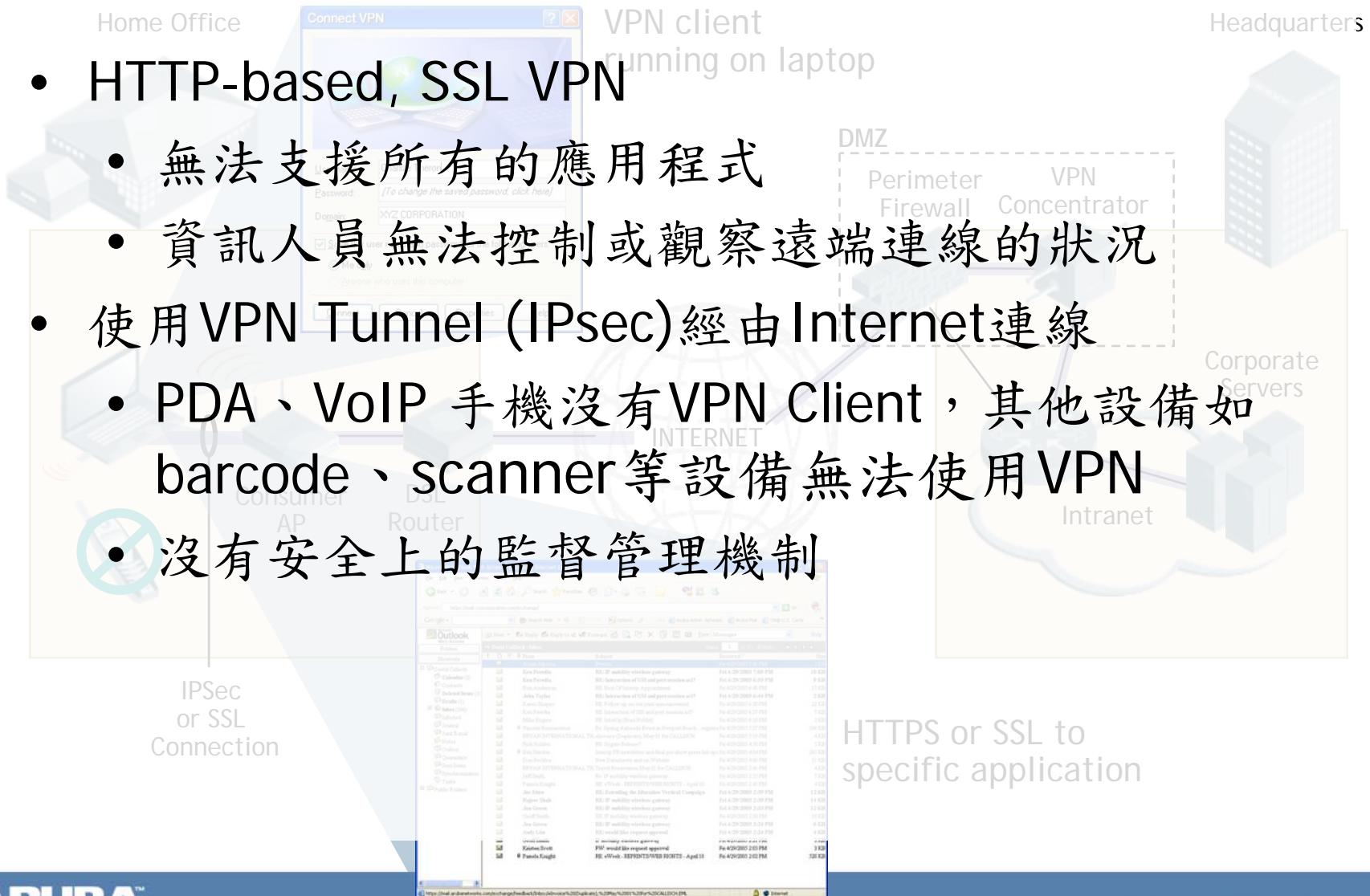


所有安全政策都在集中控管的
mobility controller中設定並執行



現在一般遠端存取的方式- Client VPN

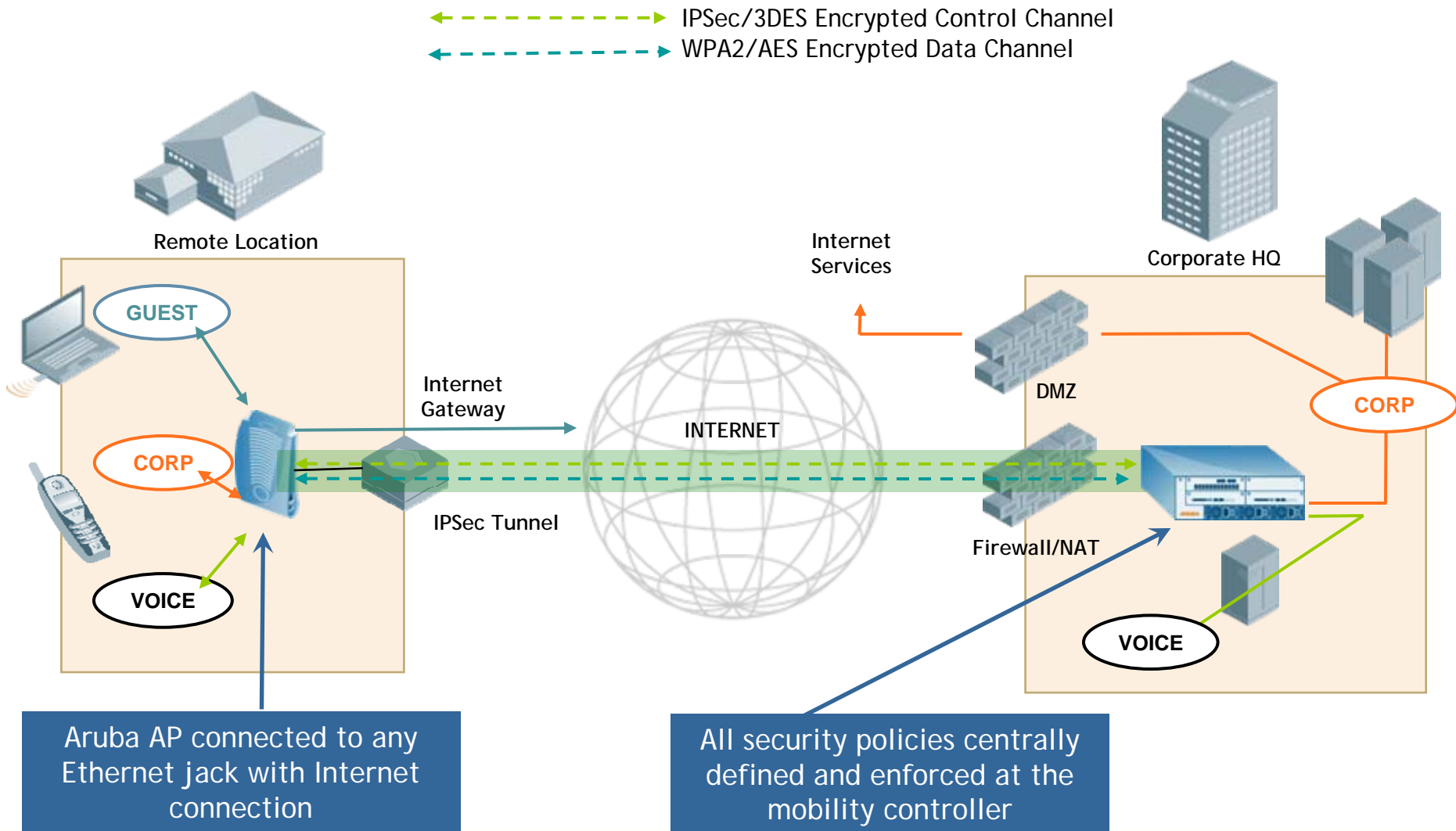
- HTTP-based, SSL VPN
 - 無法支援所有的應用程式
 - 資訊人員無法控制或觀察遠端連線的狀況
- 使用VPN Tunnel (IPsec)經由Internet連線
 - PDA、VoIP 手機沒有VPN Client，其他設備如barcode、scanner等設備無法使用VPN
 - 沒有安全上的監督管理機制



IPSec
or SSL
Connection

HTTPS or SSL to
specific application

Aruba 解決方案 - Remote AP



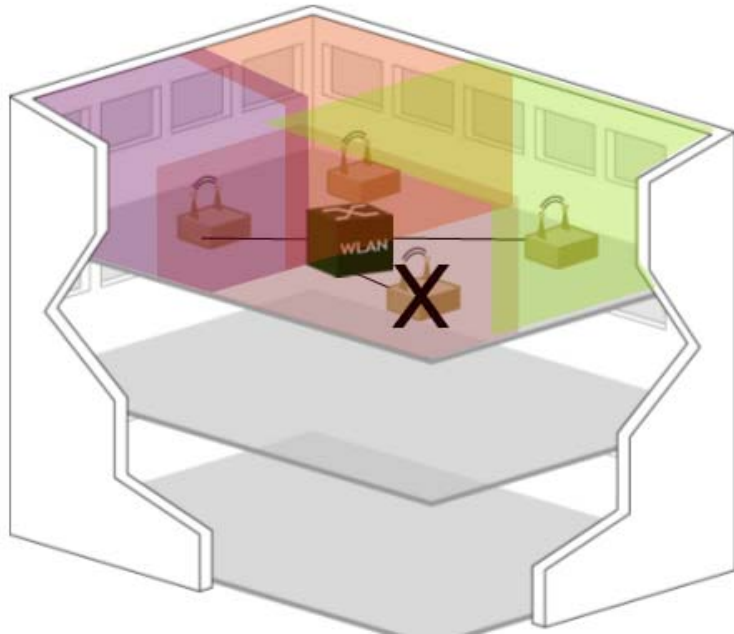
可靠度



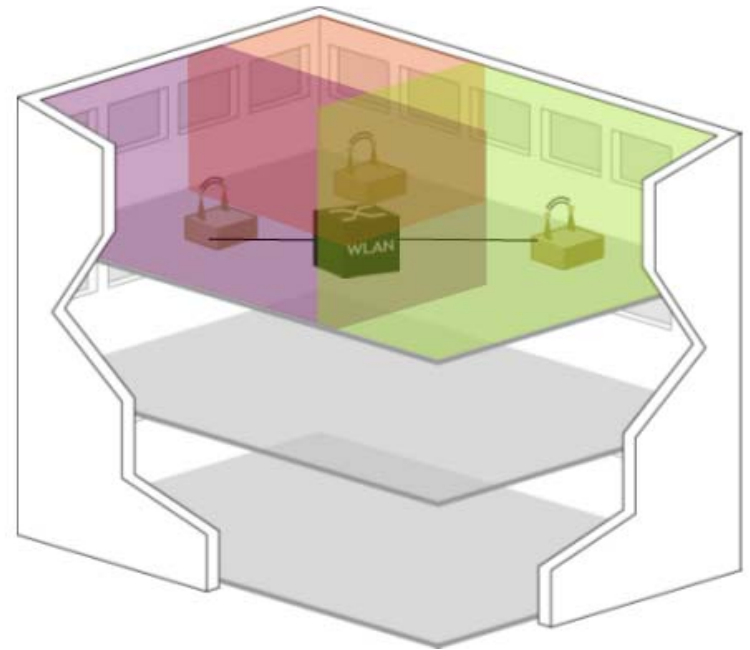
ARUBATM
The **Mobile Edge** Company

RF訊號自動修復 Self-Healing Wi-Fi

WLAN switch
偵測AP故障

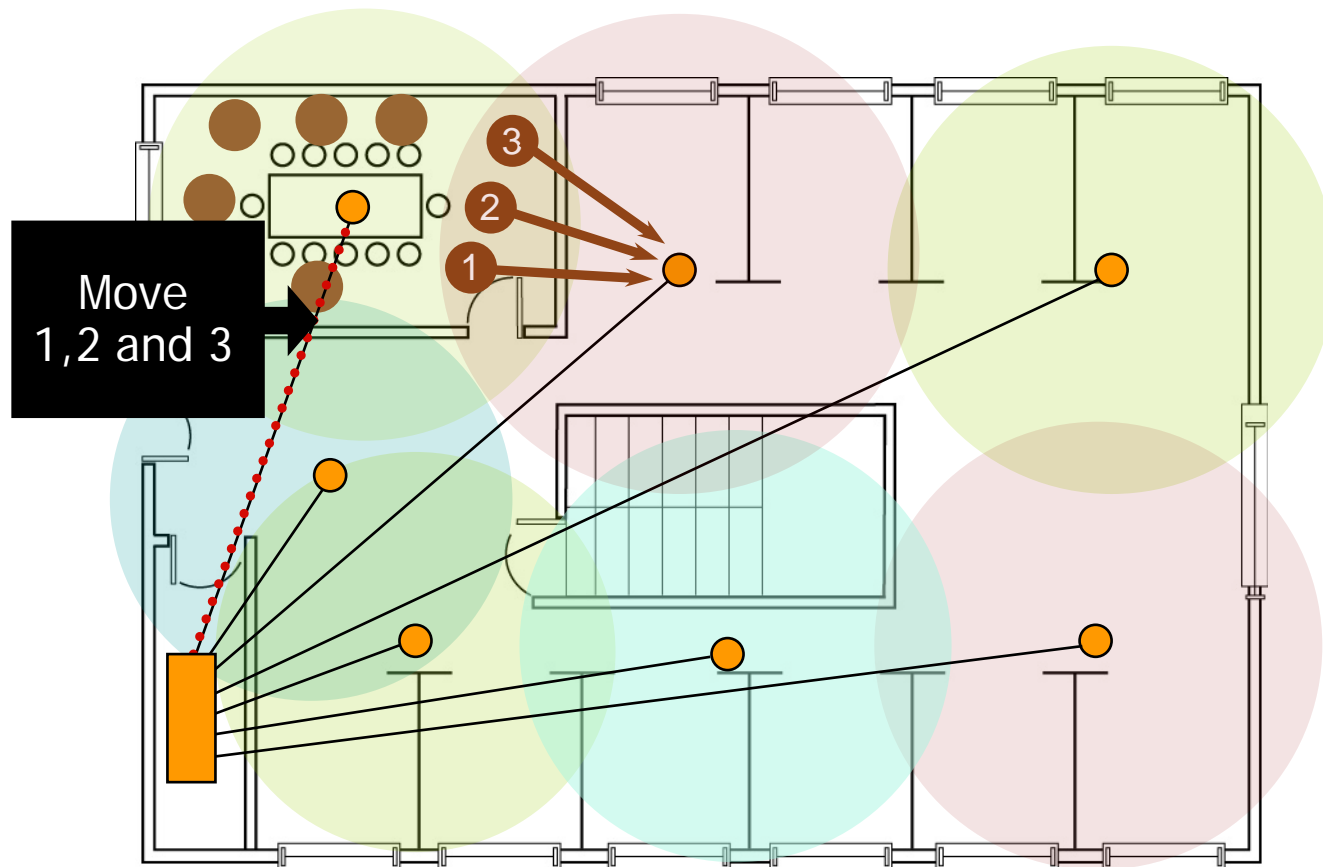


自動修復AP故障造成的漏洞
Plug and Play的AP
自動下載原來AP的設定



AP自動負載平衡功能

依照連線使用者數量及使用率，讓使用者分散連線至多台AP



無縫隙的漫遊 (Roaming)

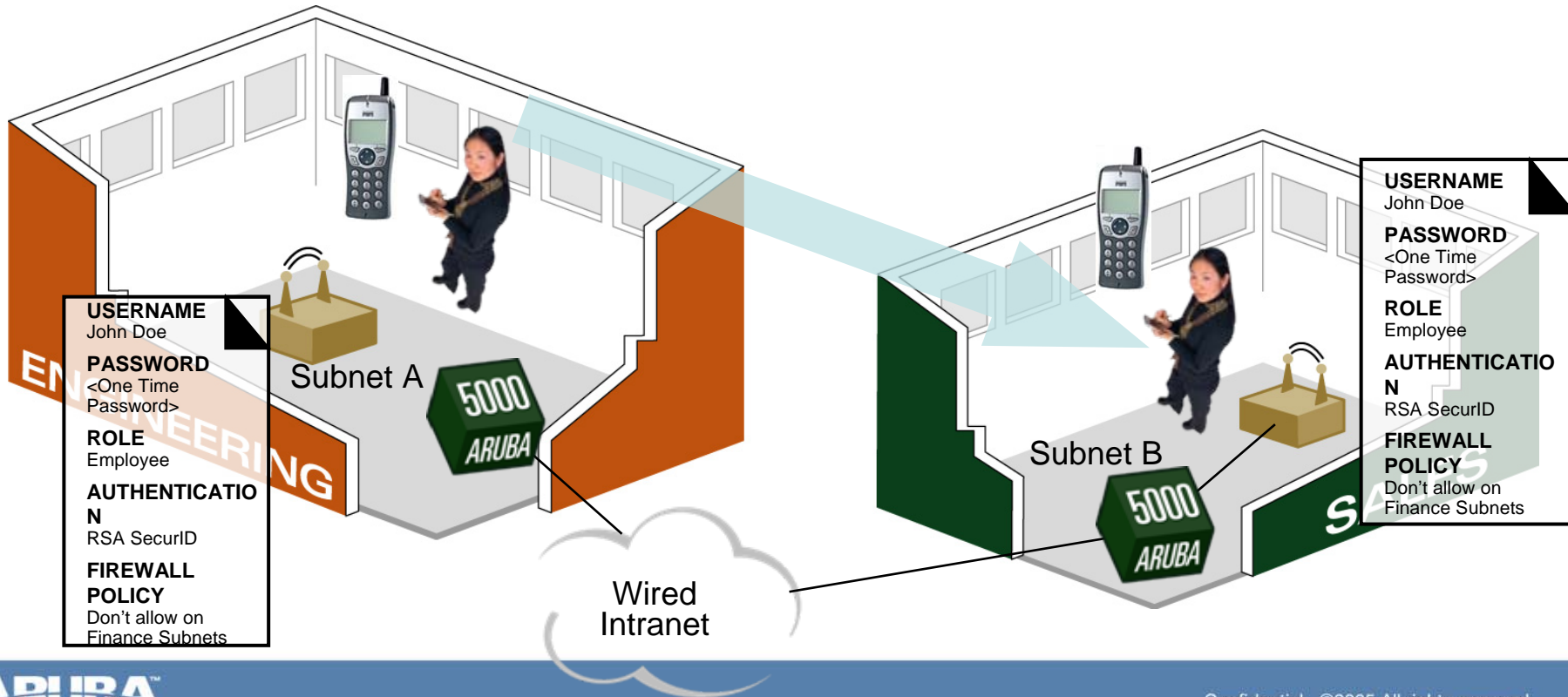
Role-based Secure Access Control

Fast Roaming

- <10 msec, AP-AP intra-switch (AP連接於同一 switch)
- <20 msec, AP-AP inter-switch (AP連接於不同switch)
- 跨網段漫遊 (client不需做任何設定)

Authentication and Role Assignment

- 802.1X – PEAP, TTLS, TLS
- Browser Based Captive Portal
- VPN – IPSEC, PPTP
- Interoperable with Existing RADIUS, LDAP & RSA Secure ID



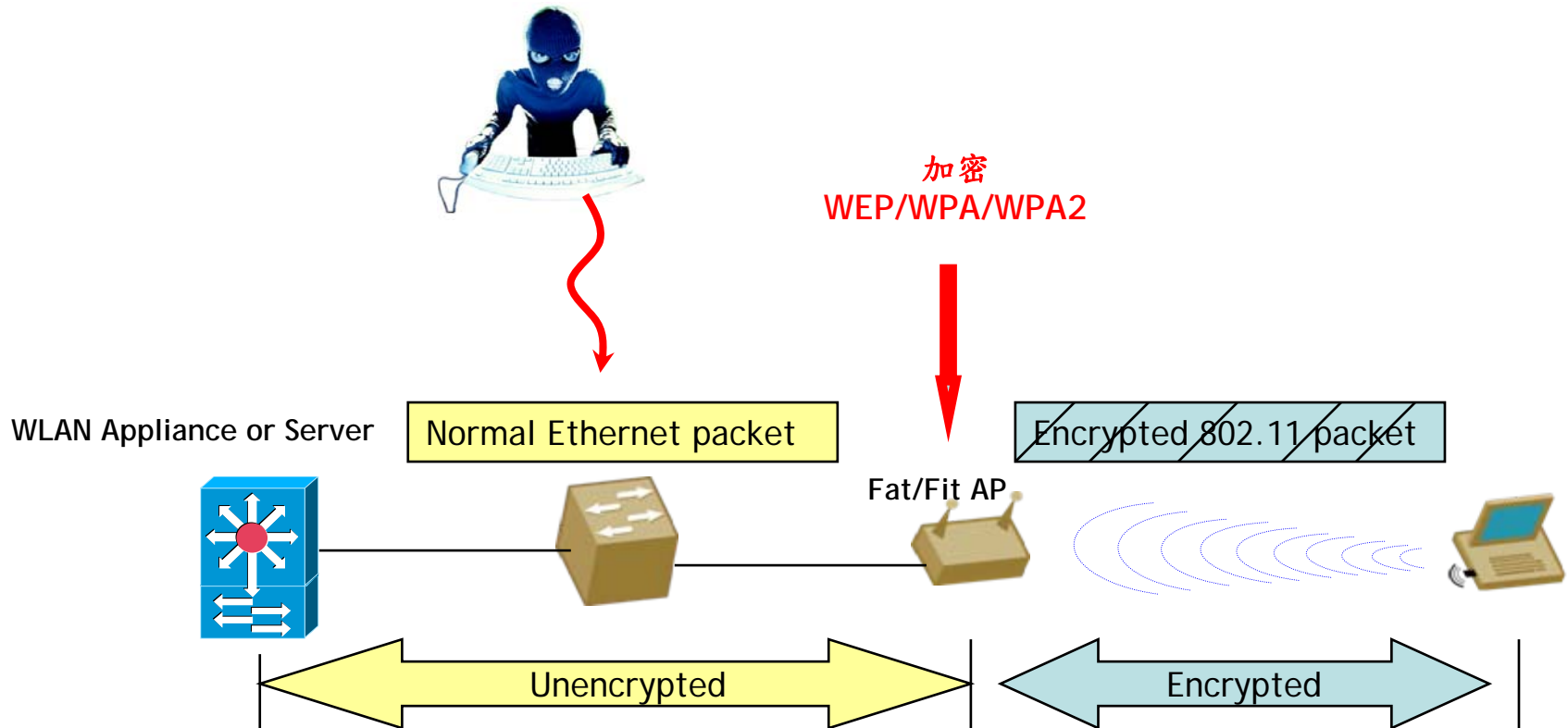
安全



ARUBATM
The **Mobile Edge** Company

傳統建置無線網路的問題：這樣安全嗎？

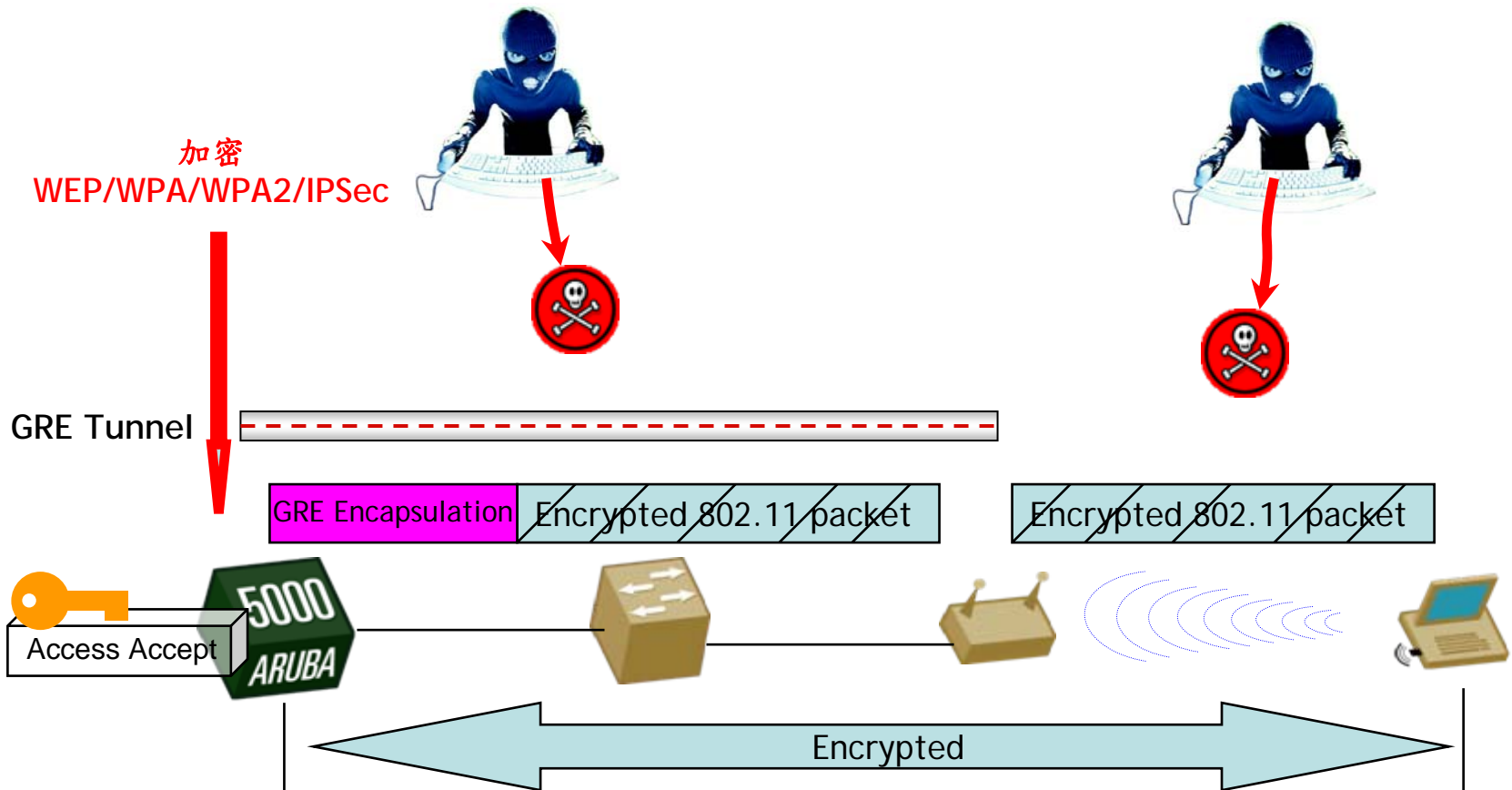
- 傳統 Wireless LAN (802.11) 加密方式：
只有Client至AP加密，AP至骨幹網路之間成為安全漏洞



只有ARUBA 以 End-to-end secure communication 解決這樣的問題

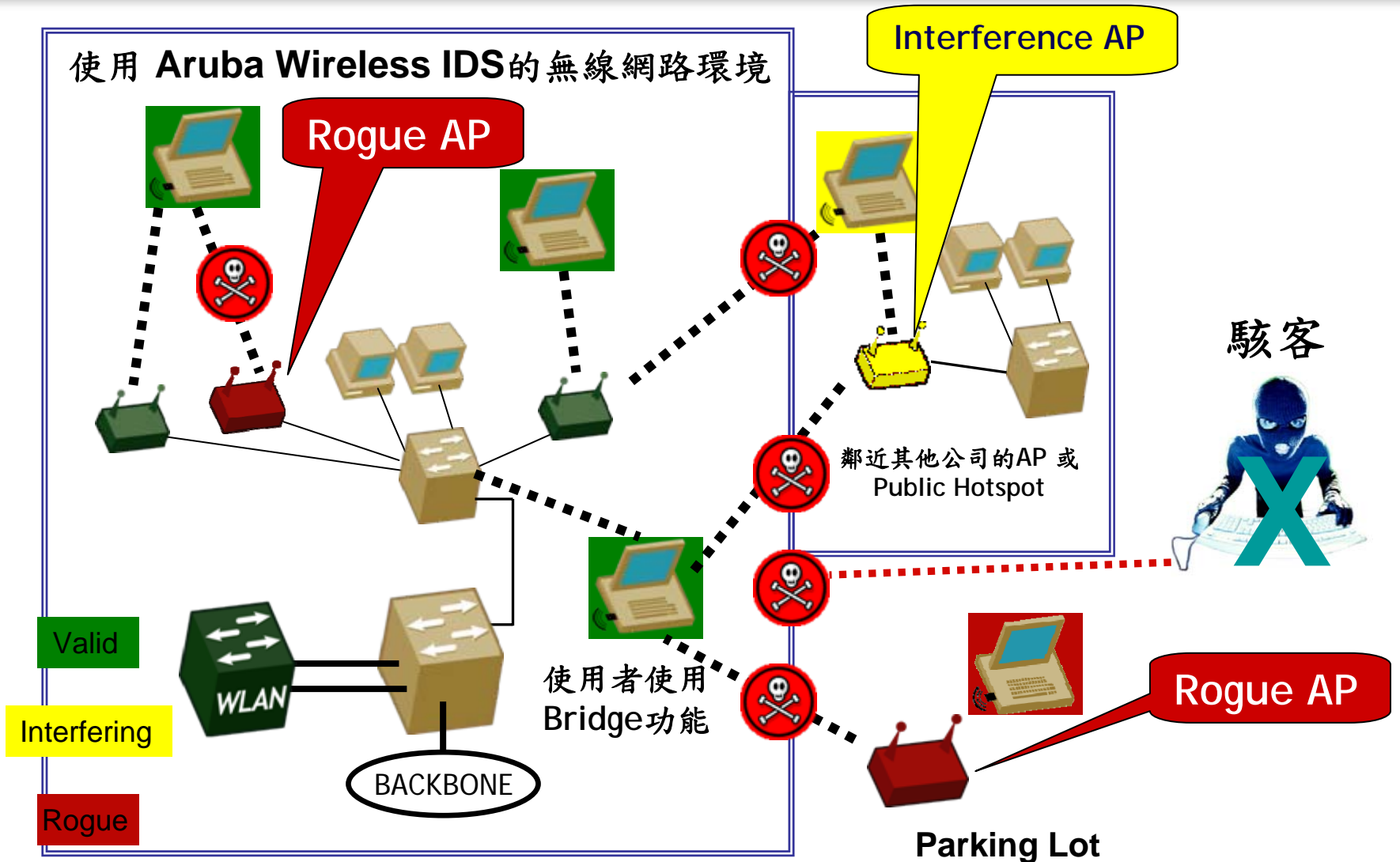
ARUBA Centralized Encryption/Decryption

- ARUBA Wireless LAN 加密方式：
從 Client 至 ARUBA 所連接的骨幹網路之間皆為加密的 802.11 封包



無線網路安全

Rogue AP 偵測、分類、阻絕、駭客入侵偵測防禦



誰可以使用網路 - 多樣性的認證加密方式

Aruba Mobility Controller



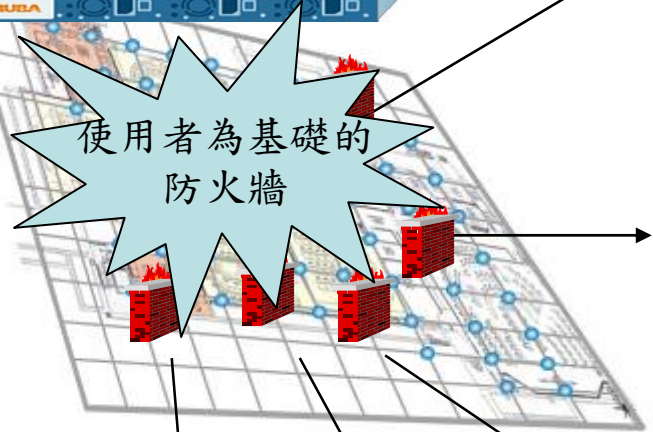
CAPTIVE PORTAL

REGISTERED USER

USERNAME

PASSWORD

Logging in as a registered user indicates you have read and accepted the **Acceptable Use Policy**.



使用者為基礎的
防火牆

802.1x



VPN



SSID

MAC

內建網頁認證
Client不需設定

802.1x-WPA/WPA2
提供最安全的認證

VPN
業界標準成熟的
IPSec 加密

SSID/MAC
簡單，使用最容易

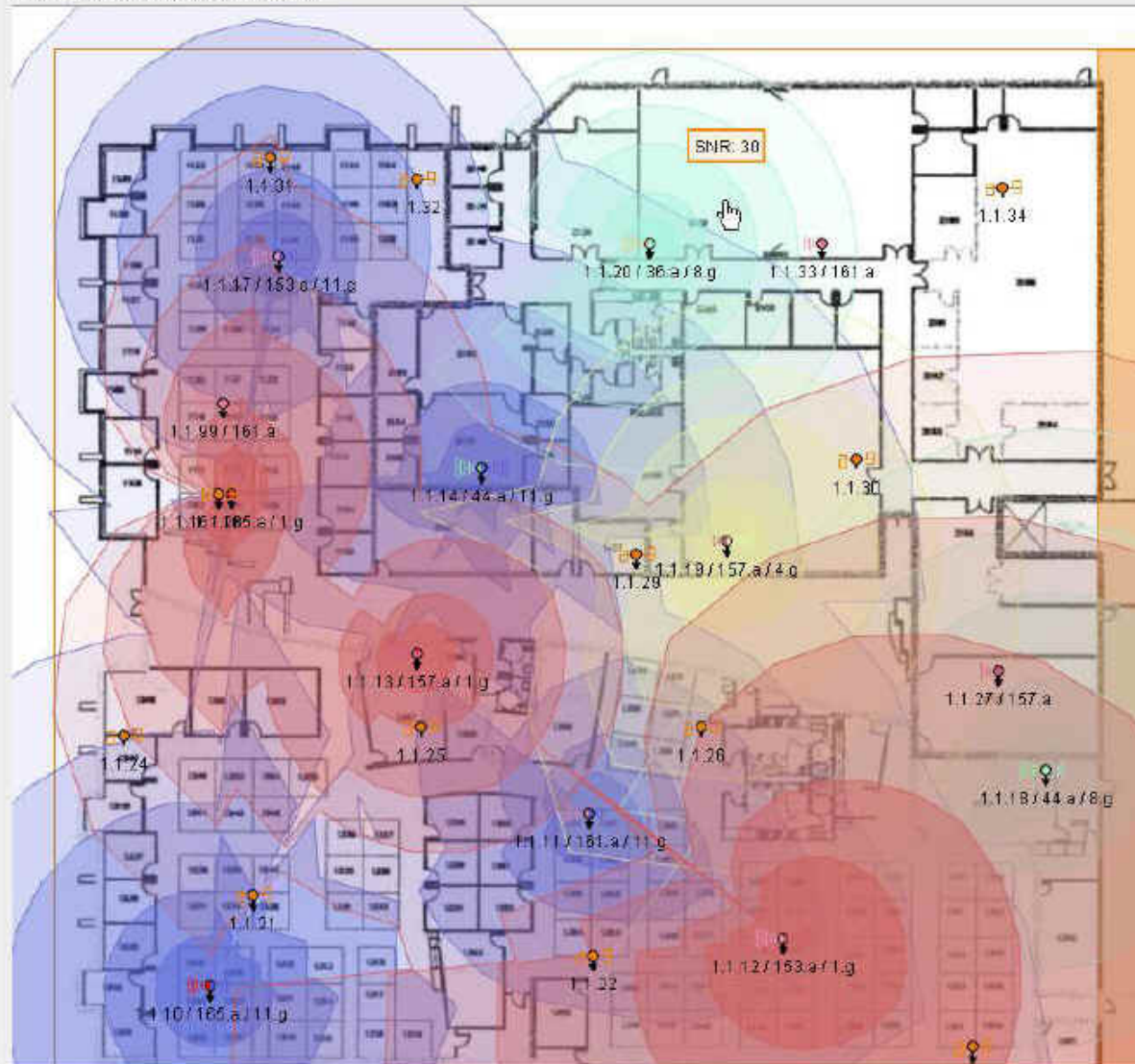
容易管理



ARUBATM
The **Mobile Edge** Company

動態無線網路訊號圖

Floor 1: Company ABC | edit floor



- 檢視即時的無線網路訊號-在每棟建築物每個樓層
- 有效減少人員徒步檢視無線網路訊號的成本
- 即時檢視
 - ✓ 訊號雜訊比 (SNR)
 - ✓ 干擾
 - ✓ 指定的資料傳輸率覆蓋程度
 - ✓ 視覺化階層式的檢視

使用者追蹤 (Client Tracking)

追蹤系統中所有使用者資訊並提供完整log記錄及Client連線debug功能

遠端中斷使用者連線

Locate
定位，直接以圖示顯示使用者位置

將使用者加入黑名單

Packet Capture
遠端封包擷取，不須走到使用者旁邊即可抓取使用者無線網路封包

無線網路Client除錯，不須走到使用者旁邊就能處理連線問題

The screenshot shows the 'Enterprise Clients' management page. At the top, there are tabs for 'Monitoring', 'Configuration', 'Maintenance', 'Plan', and 'Event'. Below the tabs, there are sections for 'Summary', 'Switch', and 'Clients'. The 'Clients' section is active, displaying a table of client information. The table has columns for 'MAC address', 'IP Address', 'User Name', 'Access Method', and 'Age (d:h:m)'. The table contains several rows of data, with one row highlighted in yellow. Below the table, there are buttons for 'Status', 'Profile', 'Client Activity', 'Debug', 'Packet Capture', 'Locate', 'Disconnect', 'Blacklist', and 'Ping'. The 'Locate' button is highlighted in yellow.

MAC address	IP Address	User Name	Access Method	Age (d:h:m)
90:7a:01:35:01	10.5.168.103	spectralink		02:14:52
90:7a:01:2d:b7	10.5.168.102	spectralink		02:14:52
90:7a:01:2c:36	10.5.168.105	spectralink		02:14:49
90:7a:01:25:01	127.255.213.64	spectralink		02:14:52
00:0b:be:00:00:00	15.6.240	employee	802.1x	00:00:00
00:08:21:31:b0:b7		logon		00:00:00
ARUBANETWORKS\aaagarwal	00:0c:ce:4e:0c:4a	employee	802.1x	00:00:00
00:04:23:5c:e0:4a	0.0.0.0	employee	802.1x	00:00:01
0c:41:f6:8f:a4	0.0.0.0	logon		00:03:18
0c:85:bb:aa:a6	0.0.0.0	logon		00:13:21

WiFi 設備定位 Real-time Location Tracking

The screenshot shows the Aruba RF Locate web interface in Microsoft Internet Explorer. The page title is "ARUBA RF Locate". The navigation menu includes "Monitoring", "Configuration", "Plan", "Events", "Reports", and "Logout". The current view is "Locate > Hinds Hall, First Floor".

Control

Zoom: 240 | 240% | Approx. Coverage: Contour | Coverage Rate: N/A

Refresh every: No refreshing | Refresh Now | Stop @ 16:33:24 7/13/2004

Target Devices

DEV	Manufacturer	MAC	Coord.	Type	CH	User	SSID	BSSID	Active
<input type="checkbox"/>	AP Aruba Networks	00:0b:86:80:09:38	N/A	INTERFERING	36		Gui-Testing		Active
<input type="checkbox"/>	AP Aruba Networks	00:0b:86:a0:02:11	211, 10, 1	ROGUE	161		VAP002-10.3.17.3		Active
<input type="checkbox"/>	AP Aruba Networks	00:0b:86:a0:02:13	204, 8, 1	ROGUE	161		VAP003-10.3.17.3		Active
<input checked="" type="checkbox"/>	STA Agere Systems	00:02:2d:51:a9:ec	93, 23, 1	VALID	1		aruba-range	00:0b:86:a0:48:40	Active
<input type="checkbox"/>	STA Philips Components	00:05:4e:44:2b:95	37, 123, 1	VALID	52	ARUBANETWORKS\sca	aruba-alpha-ap	00:0b:86:a0:4c:30	Active
<input type="checkbox"/>	STA Philips Components	00:05:4e:45:ed:b5	N/A	VALID	157	ARUBANETWORKS\vipin	aruba-alpha-ap	00:0b:86:80:62:f8	Active

Buttons: Add Device, Choose Devices..., Remove Device

Floor 1 | Edit Floor

The floor plan below the table shows a detailed layout of the first floor of Hinds Hall. A pink circular area highlights a specific location on the map, corresponding to the selected STA device in the table above.

- 尋找並追蹤無線網路設備位置
- Rogue AP
- 資產管理 (Wi-Fi Tag)
- 無線網路使用者
- 攻擊來源
- 任何802.11的設備

Remote Packet Capture

總部

連線有問題!
效能有問題!
是誰在搞鬼?
開始擷取封包查看

AiroPeek - [Capture 1]

Packets received: 6,050
Packets filtered: 6,050
Packets processed: 6,050
Memory usage: 15%

Packet	Source	Destination	BSSID	Data Rate	Channel	Sig
1	00:0C:30:9D:44:28	Broadcast	00:0C:30:9D:44:28	1.0	6	
2	00:80:C8:1B:2B:C9	Broadcast	00:80:C8:1B:2B:C9	1.0	6	
3	00:80:C8:B0:55:66	Broadcast	00:80:C8:B0:55:66	2.0	6	
4	00:30:F1:70:49:74	Broadcast	00:30:F1:70:49:74	1.0	6	
5	00:C0:49:B0:14:13	Broadcast	00:C0:49:B0:14:13	2.0	6	
6	00:40:96:56:06:16	Broadcast	Broadcast	1.0	6	
7	00:30:F1:70:49:72	Broadcast	00:30:F1:70:49:72	1.0	6	
8	00:07:50:D5:A8:29	Broadcast	00:07:50:D5:A8:29	1.0	6	

Messages: 38,019 | 35,759 | 0 | 0

Date	Time	Message
07/19/2003	14:42:54	Alarm "Errors per second" resolved
07/19/2003	14:47:17	Alarm "Errors per second" triggered
07/19/2003	14:47:25	Alarm "Errors per second" resolved
07/19/2003	14:52:19	Alarm "Errors per second" triggered
07/19/2003	14:53:14	Alarm "Errors per second" resolved
07/20/2003	11:23:18	AiroPeek quit
07/20/2003	12:09:32	AiroPeek started
07/20/2003	12:09:54	Selected adapter: Cisco Systems 340 Series PCMC...
07/20/2003	12:10:04	New capture

Cisco Systems 340 Series PCMCIA Wireless LAN Adapter | BSSID: 00:40:05:DE:FA:8F

可從Web-based管理介面配合
Packet Capture軟體, 抓取任何
Aruba AP涵蓋範圍內的無線網
路封包

ARUBA Product Portfolio



ARUBA™
The **Mobile Edge** Company

Aruba 完整的產品線



Aruba 2E

- Wired grid point
- 1+1 Ethernets
- Wall mounted



Aruba 80 AP

Outdoor
Dual-Radio (a/b/g)
Access Point/Bridge



Aruba 65 AP

**Aruba
804/800**
for the Branch Office



Aruba 2400
for Regional Locations

**Aruba
5000/6000**
for the Campus



Aruba 70 AP

Dual-Radio (a/b/g)
Access Point
Air Monitor (All bands)



Aruba 60/61 AP

Single-Radio (selectable a or b/g)
Air Monitor (All bands)
Detachable antennae (AP 60)



Aruba 41 AP

Single-Radio (selectable a or b/g)
Air Monitor (All bands)
Integral adjustable tri-band
antenna

ArubaOS
Embedded Wireless
Software Application



RF Director

RF Management
Applications



**Wi-Jack
DUO**

Traditional Solution

The Aruba Mobile Edge Solution

Access Points



Site Survey



Packet capture



Air Monitors



WiFi IDS / IPS



POE Switches



WLAN Switches/Blades



Captive Portal



VPN Concentrator



LAN-speed Firewall



Router/QoS Devices



Multiple Management Systems



Upgrades, Integration



Wired/wireless
access points

Wi-Jack DUO



Mobility Controllers

An Integrated, Total Solution

More Secure

More Functional

Easier To Manage

Easier To Deploy

Easier To Grow/Scale

Lower Cost