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UNSW UniWide Wireless

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Outline of Presentation

- UniWide 2002 – Overview and lessons learnt
- UniWide 2008 – Objectives and requirements
- Functional and Technical design
- Security considerations and issues
- Issues in implementation of UniWide 2008 Network
- Benefits to UNSW
- Next Steps/ The Future

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UniWide 2002 - Overview

- Implemented in August 2002 with initial roll out of 80 x 802.11b Lucent base stations
- Targeted student areas
- Cisco VPN was used to authenticate and encrypt traffic backend to Central Radius server
- Cisco Service Selection Gateway (SSG) on 7400 Router used to provide charging mechanism

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UniWide 2002 – Lessons Learnt

- Charging for Wireless did not provide value for money for student experience but did reflect cost of service
- Coverage was average across Campus
- Early adoption resulted in Lucent promising 802.11g card upgrade for chassis – but never eventuated
- VPN – while secure required software to be installed and hindered uptake
- Autonomous base stations resulted in larger management overhead with no mobility between AP's
- Difficult to allow guest access

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UniWide 2008 – Objectives and Requirements

- Improve the student experience on Campus
- Easy to use with minimal setup
- Reduce costs
- Improve coverage, service quality and support
- Leverage existing infrastructure
- Tech refresh aging wireless infrastructure

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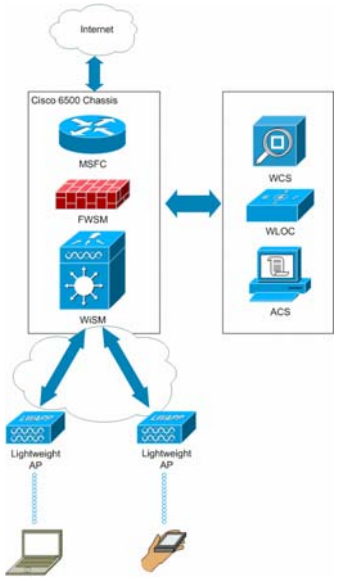
Functional and Technical Design



Cisco Wireless Services Module (WiSM) is a Wireless LAN Controller that works in conjunction with Cisco Aironet lightweight access points and Cisco WCS delivering real-time mobility and network access to endpoint devices and users. The features include security policies, intrusion prevention, radio frequency (RF) management, quality of service (QoS), and mobility.

Cisco Wireless Control System (WCS) enables single solution for policy provisioning, network optimization, troubleshooting, user tracking, security monitoring, and wireless LAN systems management.

Cisco Wireless Location Appliance (WLOC) is optional and can integrate with Cisco WLAN Controllers and Cisco lightweight access points to track the physical location of wireless while also recording historical location information that can be used for location trending, problem resolution, and RF capacity management.

Cisco Secure Access Control Server (ACS) provides centrally managed access to network resources including authenticates and authorises wireless users and hosts and enforces wireless-specific policies.

Cisco Aironet lightweight access points (AP's) provide 802.11a/b/g dual-band, integrating with Cisco Wireless systems to provide zero touch configuration and management.

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Security Considerations and Issues

- New UniWide Wireless had to match or improve on the VPN solution's level of security
- WPA2-Enterprise security using PEAP as implemented by many other large organisations including other universities because it is a scalable solution
- PEAP inner authorisation is MSCHAPv2 to standard UNSW logon credentials

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Issues in implementation of UniWide Network

- Authentication
- Timing
- Support from peers
- Limited time to ready for Session 1 2008
- DHCP scope

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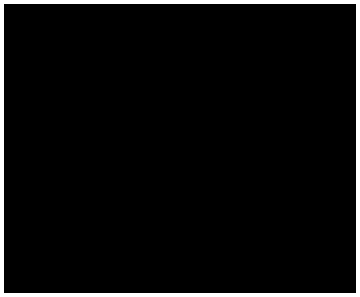
Issues in implementation of UniWide Network

- Promotion to new students



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Benefits to UNSW

- Improved Student Experience – ease of use and removal of charges
- Integrated security
- Centralised management
- Improved visibility
- Flexible – Build once, use many
- Leverage existing hardware
- Guest access functionality

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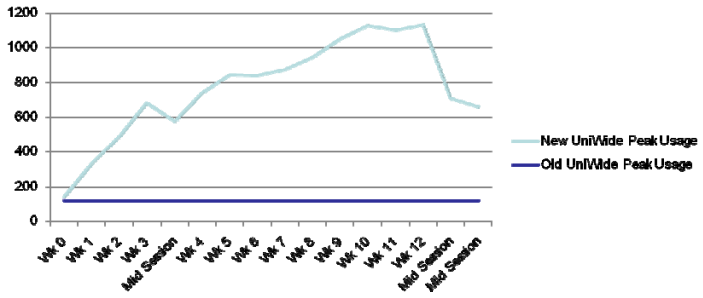
Benefits to UNSW

Old UniWide
4,500 users in 6 years

New UniWide
Over 11,000 users in 6 months



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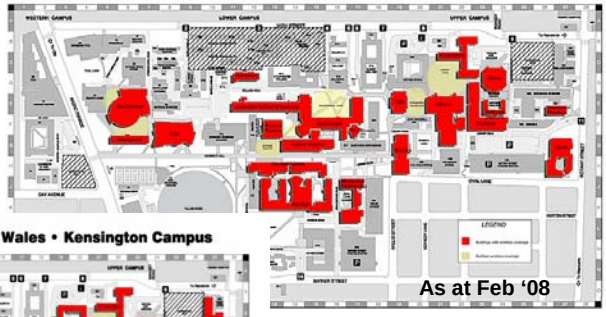
Benefits to UNSW

Legend

Buildings with some coverage within (red)
Outdoor areas with coverage (yellow)



As at Feb '08

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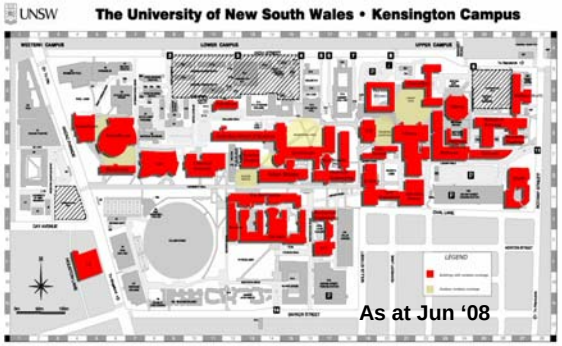

As at Jun '08

Note:
UNSW UniWide Wireless managed centrally from Kensington Campus also manages several WAN sites including COFA, St Vincents/ Garvan, Albury, Wagga Wagga and Coffs Harbour.

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Next Steps/ The Future

- Deploy additional 250 base stations
- VOIP support
- Upgrade to 802.11N when standard ratified
- Service control and policies
- Asset tracking using wireless bar code readers
- Integration with EduRoam?
- Cisco NAC?
- UNSW VOIP?

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Questions?

Thank you for your time

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