

## FOSS Delivers Ruckus Smart Wi-Fi for American University of Sharjah (AUS)



Sharjah has become one of the most important learning centers in the Middle East thanks to the foresight of His Highness Sheikh Dr. Sultan Bin Mohammed Al Qasimi, Member of the UAE Supreme Council, Ruler of Sharjah and President of American University of Sharjah.

Located in a beautiful 127-hectare campus in University City, American University of Sharjah (AUS) was founded in 1997 by His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi. AUS is an independent, not-for-profit, coeducational institution of higher education formed on the American model.

Considered a leading university in the Middle East, AUS has a truly multicultural campus with a student body of over 5,750 students comprising more than 90 nationalities. It offers 26 majors and 52 minors at the undergraduate level and 14 master's degrees through its four academic divisions, namely the College of Architecture, Art and Design; College of Arts and Sciences; College of Engineering; and the School of Business Administration.

### THE PROJECT

Prior to the initiation of their Next Generation Wi-Fi Project, American University of Sharjah had only deployed Wi-Fi into selected administrative buildings in an ad hoc manner. By early 2012 with the dramatic increase in the number of Wi-Fi enabled mobile devices, including a student community (each with an average of three Wi-Fi devices), the deployment of ubiquitous Wi-Fi across the campus became a necessity.

The university had some previous exposure to Wi-Fi networks and had already experienced the limitations of their first generation Wi-Fi deployment, consequently it knew that it must evaluate and select a technology that would provide **carrier grade reliability under all conditions**, including high density environments both in the Lecture Theatres, Student Accommodation, Sports Complex and Student Activity Centre.

To that end the IT Department at AUS initiated their procurement process that involved an **18 month proof of concept trial** to evaluate all the leading Wi-Fi technology vendors, including some cloud based solutions. Ultimately, seven technology vendors were invited to temporarily install their proposed solution at the university and these were each evaluated for 3 to 4 weeks in a 'real life' environment.

After this evaluation **Ruckus Smart Wi-Fi was selected as best** meeting the university's requirements for high user densities and robust wireless coverage. It was the university's intention to utilize the new wireless solution in all the lecture theatres and even conduct examinations over the wireless LAN.

### OVERVIEW

Founded in 1997 by His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi, Member of the Supreme Council of the United Arab Emirates, Ruler of Sharjah and President of the American University of Sharjah, AUS is a leading educational institution in the Gulf region, American University of Sharjah (AUS) has earned a significant reputation throughout the region for its academic excellence and multicultural campus life.

### REQUIREMENTS

- Wi-Fi technology to provide carrier grade reliability under all conditions
- Install new wireless LAN for student accommodation rooms
- Blanket coverage of the academic areas of the campus with a robust Wi-Fi solution

### SOLUTION

- 1,427 x Zoneflex™ Concurrent (2.4GHz/5GHz) Dual Band 802.11n Smart Wi-Fi Indoor and Outdoor Access Points
- Redundant ZoneDirector™ 3000 and ZoneDirector™ 5000 Wireless LAN Controllers configured in load balanced (50/50) 'Smart Redundancy'
- 319 x Zoneflex™ 7363 Series Concurrent (2.4GHz/5GHz) Dual Band 802.11n Smart Wi-Fi Indoor Access Points.
- 142 x Zoneflex™ 7372 Series Concurrent (2.4 GHz/5GHz) Dual Band 802.11n Smart Wi-Fi Indoor Access Points.
- 3 x Zoneflex™ 7982 Series Concurrent (2.4 GHz/5GHz) Dual Band 3x3:3 (500 concurrent client stations per AP) 802.11n Smart Wi-Fi Indoor Access Points.
- 2 x ZoneFlex™ 7762 Series Concurrent (2.4 GHz/5GHz) Dual Band 802.11n Smart Wi-Fi Outdoor Access Points with Dynamic Beamforming and Smart Wi-Fi Meshing.
- 3 x Zoneflex™ 7782 Series Concurrent (2.4GHz/5GHz) Dual Band 802.11n Smart Wi-Fi Outdoor Access Points with Adaptive Antenna Technology and Transmit Beamforming.
- 60 x Zoneflex™ R600 Dual Band 802.11ac 3x3:3 Smart Wi-Fi Indoor Access Points

### BENEFITS

- Integrated BYOD solution
- Low cost of ownership
- Support high density applications in student refectory and lecture theatres
- Dramatic 46% reduction in fault calls
- Wi-Fi coverage campus wide
- Multimedia Support
- Carrier Grade reliability supporting examinations over Wi-Fi

*"Implementing foundational technologies like ubiquitous wireless networks supports American University of Sharjah's higher education teaching, learning, researching and service mandate. A reliable, available and secure wireless network enables new ways to support our community by delivering access to University IT services indoors and outdoors. IT Service Desk network trouble tickets have dropped by 46% in the past year with the switch from wired to wireless access. Faculty members now conduct online examinations that depend on the wireless network for groups of 30 students at a time throughout the academic year. By the end of summer 2014, AUS will complete the full coverage of the academic, administrative and student dormitory areas of the campus with Ruckus Networks. This strategic investment will position AUS to meet the demands of Bring Your Own Device (BYOD) for our students, faculty and staff."*

Leo de Sousa  
Former Director of Information  
Technology at American University  
of Sharjah  
Chairman of the UAE Higher  
Education CIO Council

### **PILOT PROGRAMME (PHASE 1)**

The initial installation commenced in June 2012 and involved three administrative buildings.

This phase was considered to be the pilot that allowed the IT team to fully evaluate the Ruckus technology over a 6 month period, in a live environment, before confirming FOSS and Ruckus as the right choice for AUS.



### **STUDENT ACCOMMODATION (PHASE 2)**

The biggest challenge during Phase II involved installing the new wireless LAN into 2,200 student accommodation rooms which were already occupied by both male and female students. FOSS was given critical deadlines for each accommodation block so that the students occupying the dormitories were not adversely affected.

The Wi-Fi roll out involved installing new Cat6 UTP cabling to each of the ceiling mounted Access Points and FOSS had to ensure that the aesthetic appearance of the buildings was not impacted.

### **STUDENT DEMANDS**

Prior to the deployment of the Ruckus Wi-Fi in the Student Dormitories, network connectivity was provided throughout the campus via a structured cabling network. Even with this facility, the demand for Wi-Fi from the students resulted in unauthorized use of wireless routers and rogue access points.

In addition, the IT Support Desk was regularly called out to address faults in the cabling as a result of student misuse.

Once the Wi-Fi network was in place the Students were only able to access the University network wirelessly using multiple devices.

### **HIGH DENSITY APPLICATIONS (PHASE 3)**

Due to the stringent evaluation of the Ruckus Wi-Fi technology during the evaluation phase, the AUS IT Team knew that it had excellent capabilities to support high density user applications. This was particularly the case in the student refectory and in the lecture theatres where increasingly the University was using the new Wi-Fi network to support the lectures and even conduct examination over the wireless infrastructure.

By January 2016 FOSS has installed over 1,600 802.11n and 802.11ac Access Points both internally and externally.

**Ruckus**<sup>®</sup>  
Simply Better Wireless.