

# Hospitality



## Mandarin Oriental Takes Wi-Fi Off the DAS and Puts It Into the Wall to Transform Its Flagship NY Hotel

Always on the cutting edge of technology, the Mandarin New York, Mandarin Oriental's flagship hotel in North America, first installed what was at the time, a cutting-edge 802.11 Wi-Fi network back in 2003.

The Wi-Fi system ran over an elaborate distributed antenna system (DAS) deployed throughout the hotel that supported cellular voice and data services for its 250 guest rooms, residential suites, office space, restaurants and conference facilities.

When the Mandarin New York opened in 2003, the company had aggressive plans to offer next gen services using IP to transport high-definition video, wireless VoIP phones for the staff, digital advertising displays as well as ultra high-speed Internet access.

At the time, the guest take rate for wireless high-speed Internet access (HSIA) was hovering around 10%, according to the company. And Wi-Fi signal coverage was spotty at best with Wi-Fi signal strength over the DAS system yielding only -80 to -85 dBm. Then everything changed.

"With more and more wireless-only devices hitting the market, we began to see usage rates soar to well over 50%," said David Heckaman, VP of Information Technology at the Mandarin Oriental Hotel Group (MOHG). "While we had adequate signal distribution in most places, we simply didn't have enough capacity or reliable connectivity." According to Heckaman, one consistent problem the Mandarin New York was seeing was the inability for new 802.11n smart devices to reliably connect.

The Mandarin New York viewed wireless IP connectivity as an essential element to improving guest satisfaction and delivering exceptional services by housekeepers, engineering and front desk staff. Housekeepers, for example will be using Wi-Fi-enabled Apple iTouches running Mtech's REX application (that talks directly to the hotel business and reservation system) to track tasks and keep guest disruption to a minimum. Meanwhile front-of-house staff will use iTouches running Mtech's HotSOS application to address guest service-related issues.

Along with the increased use of Wi-Fi at the Mandarin NY was the requirement to move a wide-range of devices and applications to IP. This included the KoolConnect IP video on demand system in each room, the Inncom energy and environmental control system, VoIP phones as well as service optimization applications and rapid response systems.



Over looking Central Park and situated atop the Time Warner Center, the Mandarin Oriental NY needed to move Wi-Fi off its DAS to address coverage and density issues.

### COMPANY OVERVIEW

Mandarin Oriental Hotel Group operates luxury hotels representing over 10,000 rooms in 26 countries. With net assets worth approximately USD \$2.3 billion as at 30th June 2011, Mandarin's flagship North American property, the Mandarin New York, is located in the Time Warner Center with over 240 guest rooms, 46 residential suites, meeting, conference and business space.

### REQUIREMENTS

- Increase signal strength and coverage throughout property
- Mitigate 802.11 and non-802.11 sources of interference
- Provide in room IP connectivity to a variety of devices
- Clean, in-wall mounted form factor that reduces exposed wiring, keeps APs secure
- Increase Wi-Fi performance per user
- Simplify wireless management
- Support of high-density areas such as conference/meeting space
- Centralize administration

### SOLUTION

- 250+ ZoneFlex 7025 Wi-Fi wall switch
- 40 ZoneFlex 7962 dual-band 802.11n smart Wi-Fi access points
- 16 ZoneFlex 7343 single-band 802.11n smart Wi-Fi access points
- Redundant ZoneDirector 3000 smart WLAN controllers

### BENEFITS

- No new Ethernet cabling in guest rooms
- Single, low cost solution to address both wired and wireless connectivity
- In wall APs secure from theft
- Doubling of Wi-Fi capacity and usage
- Greater client density within conference and meeting space
- Complete wireless coverage and higher performance throughout entire hotel
- 75% reduction in guest complaints



**Ruckus**<sup>®</sup>  
Simply Better Connections



# Hospitality

*“Our existing DAS, over which we ran Wi-Fi, was never really designed to deliver the coverage and capacity that we eventually needed.*

*As we began to see our applications and devices converge to IP, along with an influx of smart devices coming into our property, we needed to move to a more carrier-class Wi-Fi system.*

*So we did.”*

**David Heckaman**

VP of Technology  
Mandarin Oriental  
Hotel Group

**RIGHT**

Mandarin New York has seen a 50-fold increase in Wi-Fi traffic over the last two years.

Unique Sessions	Sessions	Total Traffic	Received	Sent	Mo.	Year
2656	5805	336.25 GB	30.25 GB	306 GB	10	2009
6480	26884	713.83 GB	86.55 GB	627.27 GB	10	2010
12041	75981	1.85 TB	195.38 GB	1.66 TB	10	2011

Over the DAS, several Cisco 802.11b access points in each IDF on every floor were previously used to provide Wi-Fi access. According to the Mandarin, the DAS was optimized for delivering indoor cellular coverage in the hotel, not Wi-Fi. And while Wi-Fi coverage was adequate, there were a number of dead spots near windows and obstructions that were problematic.

As Wi-Fi use increased, so did complaints. Guests were finding it difficult to maintain wireless connectivity in areas where Wi-Fi signals couldn't reach. To help address these problems, the DAS system was segregated further. But the demands for more capacity and better Wi-Fi connectivity continued to skyrocket.

**IN ROOM DEVICES MOVING TO IP**

What's more, the hotel is in the process of moving many of its in-room devices such as phones, TVs and in-room controls as well as guest services applications to a converged IP network model and needed more industrial-strength Wi-Fi to increase the reliability of connections, flexibility of its staff and to improve response times.

“Many of the devices our staff uses and guest are now bringing into the hotels are wireless only, such as tablets and smartphones,” said Heckaman.

These devices typically have weak Wi-Fi implementations, are low powered and don't roam well between access points. This turned out to be problematic for Mandarin's legacy Wi-Fi service, so the hotel began looking at alternatives to deliver a much stronger Wi-Fi signal that was pervasive and could handle multiple service and more concurrent users.

Another concern for Mandarin

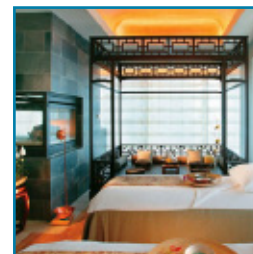
was available cabling. While it had designed in multiple Ethernet connections into every guest room, more were needed and adding additional cabling was cost-prohibitive. Ideally Mandarin wanted an integrated wired and wireless device in every room to offer additional wired connections and dedicated, higher speed 802.11n Wi-Fi.

“We liked the idea of having a 1:1 relationship between the access point and the guest that could also give us more wired connections in each room without disruptive cabling,” said Heckaman. “Integrating Wi-Fi directly into a standard Ethernet wall switch would allow us to not have to go back in two years to add more APs to solve the problem of balancing bandwidth with density or connectivity.”

When Mandarin began looking at placing APs in every room, they found they didn't have the spare Ethernet cable plant to support this. The hotel also wanted to free up Ethernet ports to support future LTE services and the migration of its analog in-room control system to IP, which would require yet another wired connection.

To address these concerns, Mandarin had Ruckus ZoneFlex 7025, 802.11n (2.4 GHz) wall switches installed in every guest room along with dual-band 802.11n ZoneFlex 7962 access points within high density user locations such as its conference and meeting space.

Each wall switch connects over standard 802.3af power over Ethernet (PoE) to intermediate wiring closet switches on each floor. In the MDF,



**RIGHT**

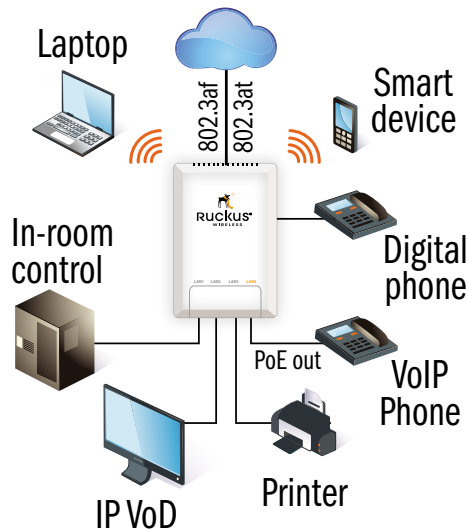
The housekeeping staff at Mandarin Oriental's New York hotel use Wi-Fi enabled Apple iTouches running Mtech's REX application to service guest rooms throughout the hotel.

*"In the first week after installing the new Wi-Fi system we saw as much bandwidth consumption as we did the previous month. We've also seen guest complaints reduce by more than 75%.*

*We didn't fully realize the necessity of Wi-Fi for both our guests and business operations until we installed a system that could really handle the depth and breath of our requirements."*

**Oscar Gomez**

IT Director  
Mandarin New York



**ABOVE**  
The Ruckus ZoneFlex 7025 Wi-Fi Wall Switch fits into any standard wall mount to provide both wired and 802.11n (2.4GHz) Wi-Fi access.

redundant ZoneDirector 3000 WLAN controllers provided a central points of management and administration for the entire wireless network.

XETA Hospitality, Mandarin's managed service provider, delivers 24/7 monitoring and troubleshooting of every IP device on the network from its central network operations center in St.Louis, MO. XETA can remotely login to the ZoneDirector to monitor traffic levels, client activity, AP signal strength and a variety of other Wi-Fi network parameters - proactively alerting the local IT director of any concerns or problems that need to or have already been resolved.

**WIRED/WIRELESS CONVERGENCE**

For the Mandarin New York, the ZoneFlex 7025 delivers high performance 2.4 GHz 802.11n wireless coverage and four wired Ethernet access connections that are used to support in-room IP devices and user connectivity options. An additional pass through port allows connectivity for digital phones that requires native access to an in-house PBX system.

The ZF7025 is powered by either standard 802.2af (15.4 watts) or 802.3at (30 watts) PoE. An IEEE 802.3af-compliant PoE port provides up to 15.4 watts for powering connected devices such as

IP telephones directly from the wall switch. The ZoneFlex 7025 requires only a single PoE cable drop thereby allowing the Mandarin to reducing cabling, switch ports, and power sourcing equipment while providing additional Ethernet ports for future IP services.

The ZoneFlex Wi-Fi Wall Switch is completely inconspicuous, minimizing the protrusion off the wall to make in-room cabling and furniture arrangement simple. Flexible deployment options allow the ZoneFlex 7025 to be easily installed via two uplink Ethernet options: an RJ-45 Ethernet jack or a 110 punch down block connection.

The ZoneFlex 7025 can be deployed as a stand-alone device or centrally managed by the Ruckus ZoneDirector or FlexMaster Wi-Fi system management platform. With the ability to broadcast up to eight SSIDs per device, the ZoneFlex 7025 supports port-based VLANs. Authentication options include: 802.1X, MAC-based, captive portal, LDAP, RADIUS, Active Directory and through an internal user database.

According to the Mandarin Oriental, in the first week of use, the Ruckus Wi-Fi system consumed more bandwidth than the entire previous month. And since installing Ruckus Wi-Fi wall switches, guest complaints have plummeted by more than 75%. Wi-Fi throughput has significantly increased and signal strength now hovers around -65 dBm, providing strong and pervasive Wi-Fi coverage across the entire hotel.

Looking forward, the Mandarin is interested in moving applications such as hotel guest check to Wi-Fi-enabled tablets. Even more critical, the Mandarin wants to be able to leverage the local Wi-Fi network within each room to allow guests to connect their own devices to its content system using technologies such as Apple's AirPlay.

"This is really where the market is going and what our customers really want," said Heckaman. "Our guests have local content they want to view or consume within our in-room A/V environment. More reliable, multimedia-ready Wi-Fi gives us the power to deliver such capabilities, helping us further differentiating our brand."

