



# Microsoft® Lync Server 2013 Open Interoperability (CS2013-OIP) WiFi Test Results

Equipment Vendor: Motorola

<b>Device</b>	<b>AP Controller</b>	<b>AP-1</b>	<b>AP-2</b>	<b>AP-3</b>
<b>HW Model</b>	NX9510	AP7131	AP7131	AP7131
<b>HW Version</b>	Rev A	FPGA Rev 2.15	FPGA Rev 2.18	FPGA Rev 2.18
<b>SW Version</b>	WiNG 5.5.0.0			
<b>Serial Number</b>	B4C7996C87-F7	10180520900359	10180520900471	11152520900187

# MANDATORY

## CHECKLIST ITEMS

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### 4.4 REQUIREMENT 3.2.1.3: 802.11N WI-FI CERTIFIED

#### 4.4.1 Access Point is 802.11n certified

Required for qualification Yes

Description The Access Point is WFA (Wi-Fi Alliance) certified for 802.11n and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
372954	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

### 4.5 REQUIREMENT 3.2.1.4: WPA2 ENTERPRISE CERTIFIED

#### 4.5.1 ACCESS POINT IS CERTIFIED FOR WPA2 ENTERPRISE

Required for qualification Yes

Description The Access Point is WiFi certified for WPA2 Enterprise by WFA and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
372960	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

### 5.2 REQUIREMENT 3.2.1.5: WMM CERTIFIED

#### 5.2.1 Access Point is certified for WMM

Required for qualification Yes

Description The Access Point is WFA (Wi-Fi Alliance) certified for WMM and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
372961	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

### 5.3 REQUIREMENT 3.2.1.6: SPATIAL STREAM

#### 5.3.1 Access Point documentation must disclose how many spatial streams are supported

Required for qualification Yes

Description Vendor documentation must disclose how many spatial streams are supported. In order for the test to pass at least 2 spatial streams must be supported.

Test Case ID	Supported / Not Supported	Reference
393050	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/</a>

		<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/_Documents/_staticfiles/AP-7131_Spec-Sheet_0910-web.pdf">WLAN%20Access%20Points/AP-7131/_ Documents/ _staticfiles/AP-7131_Spec-Sheet_0910-web.pdf</a> <a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a> 2 spatial streams (3x3:2) are supported.
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## 5.5 REQUIREMENT 3.2.2.1: DYNAMIC RF POWER MANAGEMENT

### 5.5.1 Access Point supports RF Power Management in a voice/video enabled network

Required for qualification Yes

Description Access Point supports RF Power Management in a voice/video enabled network.

Test Case ID	Supported / Not Supported	Reference
394651	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/_Documents/_staticfiles/AP-7131_Spec-Sheet_0910-web.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/_ Documents/ _staticfiles/AP-7131_Spec-Sheet_0910-web.pdf</a>

## 5.6 REQUIREMENT 3.2.2.2: DYNAMIC CHANNEL SELECTION

### 5.6.1 Access Point supports Dynamic Channel Selection

Required for qualification Yes

Description Access Point supports Dynamic Channel Selection.

Test Case ID	Supported / Not Supported	Reference
394578	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/_Documents/_static%20files/EWLAN-At-A-Glance-Brochure.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/_ Documents/ _static%20files/EWLAN-At-A-Glance-Brochure.pdf</a>

## 4 DATA

### 4.5 REQUIREMENT 3.2.1.4: WPA2 ENTERPRISE CERTIFIE

#### 4.5.2 Access Point authenticates Lync End Point using WPA2 PSK

Required for qualification Yes

Description The time taken by Access Point for authentication and association response during WPA2 PSK should be less than 100ms.

Test Case ID	Test Result							
393791	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	0 msec	2 msec	5 msec	4 msec	0%	0%	4.23	4.20
Note	Respose time = 37 msec							

### 4.5.3 Access Point authenticates Lync End Point using WPA2 Enterprise (802.1x/802.11i)

Required for qualification Yes

Description The time taken by Access Point for authentication and association response when using WPA2 802.1x should be less than 250ms while using PEAP CHAP v2.

Test Case ID	Test Result							
393798	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	0 msec	1 msec	3 msec	3 msec	0%	0%	4.23	4.24
Note	Respose time = 204 msec							

## 4.15 REQUIREMENT 3.2.5.1: BALANCING CLIENTS ACROSS ACCESS POINTS

### 4.15.1 Access Point responds with busy signal when it has reached maximum allowable users

Required for qualification Yes

Description Access Point responds with busy signal to client when it has reached maximum allowable clients and cannot accept any more associations. (Although this is an Access Point feature, the intent is to test Lync interop when the Access Point feature is enabled, hence the need to test this feature with a Lync call and measure its impact on call quality).

Test Case ID	Test Result
392022	<b>Pass</b>
Note	

### 4.15.2 WLAN system load balances clients across Access Points

Required for qualification Yes

Description Access Point responds with busy signal to client when it is saturated and cannot accept any more associations.

Test Case ID	Test Result
391946	<b>Pass</b>
Note	

## 4.20 REQUIREMENT 3.2.7.1: ENCRYPTION SUPPORT

### 4.20.1 Access Point supports WPA2-AES Encryption

Required for qualification Yes

Description Access Point supports WPA2-AES Encryption.

Test Case ID	Test Result
394799	<b>Pass</b>
Note	

### 4.20.4 Access Point supports WPA-TKIP Encryption

Required for qualification Yes

Description Access Point supports WPA-TKIP Encryption.

Test Case ID	Test Result
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394798	<b>Pass</b>
<b>Note</b>	

#### 4.26.1 Access Point performs rogue Access Point detection while servicing voice call

**Required for qualification** Yes

**Description** Access Point performs rogue Access Point detection without affecting call quality. The intension of the test is not to verify rogue Access Point detection but to ensure that Lync call quality is not affected when the Access Point attempts to perform rogue Access Point detection.

Test Case ID	Test Result							
394811	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	1 msec	0 msec	4 msec	4 msec	0%	0%	4.24	4.23
<b>Note</b>								

## 5 NOMADIC

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### 5.3 REQUIREMENT 3.2.1.6: SPATIAL STREAM

#### 5.3.2 Access Point has at least two transmit antennas

**Required for qualification** Yes

**Description** The Access Point must have at least two transmit antennas in order to support at least two spatial streams

Test Case ID	Test Result
372967	<b>Pass</b>
<b>Note</b>	Each AP has 2 radios, each with 3 antennas operating up to 3x3:2.

#### 5.3.3 Access Point has at least two receive antennas

**Required for qualification** Yes

**Description** The Access Point must have at least two receive antennas in order to support at least two spatial streams

Test Case ID	Test Result
372969	<b>Pass</b>
<b>Note</b>	Each AP has 2 radios, each with 3 antennas operating up to 3x3:2.

### 5.4 REQUIREMENT 3.2.1.7: DUAL BAND OPERATION

#### 5.4.1 Access Point can handle calls in both bands, and support calls that go between bands

**Required for qualification** Yes

**Description** Access Point can handle calls in both bands, including calls that go between bands (if concurrent dual band operation is supported).

Test Case ID	Test Result							
373551	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
Between 2.4-GHz Clients	Caller -> Callee 2 msec	Callee -> Caller 6 msec	Caller -> Callee 7 msec	Callee -> Caller 6 msec	Caller -> Callee 0%	Callee -> Caller 0.20%	Caller -> Callee 4.15	Callee -> Caller 4.15
Between 5-GHz Client	Caller -> Callee 2 msec	Callee -> Caller 3 msec	Caller -> Callee 4 msec	Callee -> Caller 4 msec	Caller -> Callee 0%	Callee -> Caller 0%	Caller -> Callee 4.21	Callee -> Caller 4.18
Between Mixed Clientss	Caller -> Callee 5 msec	Callee -> Caller 4 msec	Caller -> Callee 5 msec	Callee -> Caller 4 msec	Caller -> Callee 0%	Callee -> Caller 0%	Caller -> Callee 4.18	Callee -> Caller 4.16
Note								

## 5.7 REQUIREMENT 3.2.2.6: DEFER INTRUSION DETECTION AND SCANNING WHILE PROCESSING REAL-TIME TRAFFIC

### 5.7.1 WLAN does not cause degradation of call quality while doing Intrusion Prevention (Rogue Access Point)

Required for qualification Yes

Description WLAN does not cause more than 3 consecutive lost packets while doing Intrusion Detection.

Test Case ID	Test Result							
414487	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee 0 msec	Callee -> Caller 1 msec	Caller -> Callee 3 msec	Callee -> Caller 4 msec	Caller -> Callee 0%	Callee -> Caller 0%	Caller -> Callee 4.24	Callee -> Caller 4.23
Note	Full-time full-function intrusion detection and scanning requires a dedicated radio. Tri-radio Motorola APs are available to support simultaneous dual-band operation and detection/scanning.							

## 5.8 REQUIREMENT 3.2.6.1: WMM TAG MAPPING

### 5.8.1 Access Point maps 802.11e (WMM) priority tag for video traffic to 802.1p priority tag for video traffic on the network side

Required for qualification Yes

Description Access Point maps WMM tag for video traffic (4, 5) in the received wireless frames to 802.1p tag in the frames transmitted on the outbound network interface.

Test Case ID	Test Result							
392710	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee 3 msec	Callee -> Caller 3 msec	Caller -> Callee 4 msec	Callee -> Caller 3 msec	Caller -> Callee 0%	Callee -> Caller 0%	Caller -> Callee 4.18	Callee -> Caller 4.17
Note								

## 5.8.2 Access Point maps 802.11e (WMM) priority tag for voice traffic to 802.1p priority tag for voice traffic on the network side

Required for qualification Yes

Description Access Point maps WMM tag for voice traffic (6, 7) in the received wireless frames to 802.1p tag in the frames transmitted on the outbound network interface.

Test Case ID	Test Result							
392709	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	1 msec	1 msec	2 msec	2 msec	0%	0%	4.23	4.19

## 5.9 REQUIREMENT 3.2.6.5: PRIORITIZING TRAFFIC

### 5.9.1 Access Point can prioritize voice over video and video over data traffic with WMM and 802.1p tagging enabled

Required for qualification Yes

Description Access Point can prioritize voice over video and video over data traffic when WMM and 802.1p tagging is enabled.

Test Case ID	Test Result							
394329	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	2 msec	2 msec	3 msec	4 msec	0%	0%	4.19	4.13

### 5.9.2 Access Point can prioritize voice over video and video over data traffic with WMM tagging disabled and 802.1p tagging enabled

Required for qualification Yes

Description Access Point can prioritize voice over video and video over data traffic when WMM tagging is disabled and 802.1p tagging is enabled.

Test Case ID	Test Result							
394332	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	1 msec	3 msec	6 msec	5 msec	0%	0%	4.23	4.20

### 5.9.3 Access Point can prioritize voice over video and video over data traffic with WMM tagging enabled and 802.1p tagging disabled

Required for qualification Yes

Description Access Point can prioritize voice over video and video over data traffic when WMM tagging is enabled and 802.1p tagging is disabled

Test Case ID	Test Result							
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394333	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee 1 msec	Callee -> Caller 4 msec	Caller -> Callee 4 msec	Callee -> Caller 4 msec	Caller -> Callee 0%	Callee -> Caller 0%	Caller -> Callee 4.21	Callee -> Caller 4.10
Note								

### 5.11 REQUIREMENT 3.2.6.11: PRIORITY TAG MAPPING TO TUNNEL PRIORITY

#### 5.11.1 Access Points that tunnel all client traffic to controller map DSCP tags from the wired Lync End Point to DSCP tunnel priority tags

Required for qualification Yes

Description When Lync End Point1 makes a voice call to Lync End Point2 via Access Point that tunnels all traffic to controller/Access Point, WMM tags from the client traffic is mapped to tunnel priority markings of 802.1p.

Test Case ID	Test Result
393466	<b>Pass</b>
Note	

#### 5.11.2 Access Points that tunnel all client traffic to controller map WMM tags to DSCP tunnel priority tags

Required for qualification Yes

Description When Lync End Point1 makes a voice call to Lync End Point7 via Access Point1 that tunnels all traffic to controller, WMM tags from the client traffic is mapped to tunnel priority markings of DSCP.

Test Case ID	Test Result
393469	<b>Pass</b>
Note	

### 5.12 REQUIREMENT 3.2.9.1: SCALABILITY OF WIDE BAND CODEC VOICE CALLS WITHOUT BACKGROUND TRAFFIC

#### 5.12.1 Access Point must be able to handle at least one wide band codec voice call with no background traffic

Required for qualification Yes

Description Access Point must be able to handle at least one wide band codec voice call (two clients in call with each other) when there is no background traffic in uplink and downlink directions.

Test Case ID	Test Result
396137	<b>Pass</b>
Note	Tested with 60 emulated voice (G.711) clients,; minimum MOS > 4.0.



### 5.13 REQUIREMENT 3.2.9.2: SCALABILITY OF VIDEO VGA CALLS WITHOUT BACKGROUND TRAFFIC

#### 5.13.1 Access Point must be able to handle at least one video call with no background traffic

Required for qualification Yes

Description Access Point must be able to handle at least one video call when there is no background traffic in uplink and downlink directions.

Test Case ID	Test Result
397104	<i>Pass</i>
Note	Tested with 30 emulated voice (G.711) + video (H.263/RTP) clients; minimum MOS > 4.0.

### 5.14 REQUIREMENT 3.2.9.3: SCALABILITY OF WIDE BAND CODEC VOICE CALLS WITH DOWNSTREAM UDP TRAFFIC AND 80% CHANNEL UTILIZATION

#### 5.14.1 Access Point must be able to handle at least one wide band codec voice call with 150 Mbps downstream UDP traffic

Required for qualification Yes

Description Access Point must be able to handle at least one wide band codec voice call with 150 Mbps downstream UDP traffic.

Test Case ID	Test Result
396150	<i>Pass</i>
Note	Tested with 60 emulated voice (G.711) clients,; minimum MOS > 4.0.

### 5.15 REQUIREMENT 3.2.9.4: SCALABILITY OF WIDE BAND CODEC VOICE CALLS WITH UPSTREAM UDP BACKGROUND TRAFFIC OF 100%

#### 5.15.1 Access Point must be able to handle at least one wide band codec voice call with saturated upstream UDP traffic

Required for qualification Yes

Description Access Point must be able to handle at least one wide band codec voice call with saturated upstream UDP traffic.

Test Case ID	Test Result
396158	<i>Pass</i>
Note	Tested with 60 emulated voice (G.711) clients,; minimum MOS > 4.0.

### 5.16 REQUIREMENT 3.2.9.5: SCALABILITY OF VIDEO VGA CALLS WITH SATURATED DOWNSTREAM UDP BACKGROUND TRAFFIC OF 100%

#### 5.16.1 Access Point must be able to handle at least one video call with saturated downstream UDP background traffic

Required for qualification Yes

Description Access Point must be able to handle at least one video call with saturated downstream UDP background traffic of 100%.

Test Case ID	Test Result
397110	<i>Pass</i>

<b>Note</b>	Tested with 30 emulated voice (G.711) + video (H.263/RTP) clients; minimum MOS > 4.0.
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**5.17 REQUIREMENT 3.2.9.6: SCALABILITY OF VIDEO VGA CALLS WITH SATURATED UPSTREAM UDP BACKGROUND TRAFFIC OF 100%**

**5.17.1 Access Point must be able to handle at least one video call with saturated upstream UDP background traffic**

**Required for qualification** Yes

**Description** Access Point must be able to handle at least one video call with saturated upstream UDP background traffic of 100%.

Test Case ID	Test Result
397109	<i>Pass</i>
<b>Note</b>	Tested with 30 emulated voice (G.711) + video (H.263/RTP) clients; minimum MOS > 4.0.

**5.18 REQUIREMENT 3.2.9.7: SCALABILITY OF WIDE BAND CODEC VOICE CALLS WITH DOWNSTREAM BACKGROUND TCP TRAFFIC AND CHANNEL UTILIZATION OF 80%**

**5.18.1 Access Point must be able to handle at least five wide band codec voice call with 150 Mbps downstream TCP background traffic**

**Required for qualification** Yes

**Description** Access Point must be able to handle at least five wide band codec voice calls with 150 Mbps downstream TCP background traffic.

Test Case ID	Test Result
396152	<i>Pass</i>
<b>Note</b>	Tested with 60 emulated voice (G.711) clients,; minimum MOS > 4.0.

**5.19 REQUIREMENT 3.2.9.8: SCALABILITY OF WIDE BAND CODEC VOICE CALLS WITH SATURATED UPSTREAM TCP BACKGROUND TRAFFIC OF 100%**

**5.19.1 Access Point must be able to handle at least one wide band codec voice call with saturated upstream TCP background traffic**

**Required for qualification** Yes

**Description** Access Point must be able to handle at least one wide band codec voice call with saturated upstream TCP background traffic of 100%.

Test Case ID	Test Result
396162	<i>Pass</i>
<b>Note</b>	Tested with 60 emulated voice (G.711) clients,; minimum MOS > 4.0.

**5.20 REQUIREMENT 3.2.9.9: SCALABILITY OF VIDEO VGA CALLS WITH SATURATED DOWNSTREAM TCP BACKGROUND TRAFFIC OF 100%**

**5.20.1 Access Point must be able to handle at least one video call with saturated downstream TCP background traffic**

**Required for qualification** Yes

**Description** Access Point must be able to handle at least one video call with saturated downstream TCP background traffic of 100%.

Test Case ID	Test Result
397111	<i>Pass</i>
<b>Note</b>	Tested with 30 emulated voice (G.711) + video (H.263/RTP) clients; minimum MOS > 4.0.

## 5.21 REQUIREMENT 3.2.9.10: SCALABILITY OF VIDEO VGA CALLS WITH SATURATED UPSTREAM TCP BACKGROUND TRAFFIC OF 100%

### 5.21.1 Access Point must be able to handle at least one video call with saturated upstream TCP background traffic

**Required for qualification** Yes

**Description** Access Point must be able to handle at least one video call with saturated upstream TCP background traffic of 100%.

Test Case ID	Test Result
397113	<i>Pass</i>
<b>Note</b>	Tested with 30 emulated voice (G.711) + video (H.263/RTP) clients; minimum MOS > 4.0.

## 6 MOBILITY

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### 6.2 REQUIREMENT 3.2.8.1: OKC/PMK CACHING

#### 6.2.1 Access Point authenticates roaming client when PMK is enabled on controller/Access Point

**Required for qualification** Yes

**Description** Access Point authenticates roaming client when PMK is enabled on controller/Access Point.

Test Case ID	Test Result
394150	<i>Pass</i>
<b>Note</b>	Tested with 20 emulated voice (G.711) clients; aggregate roaming rate 60 per minute; minimum MOS > 4.0.

### 6.3 REQUIREMENT 3.2.8.2: FAST ROAMING

#### 6.3.1 Access Point ensures fast roaming between Access Points without affecting call quality when encryption used is 802.1x

**Required for qualification** Yes

**Description** Access Point ensures fast roaming without affecting call quality when encryption used is 802.1x..

Test Case ID	Test Result
395109	<i>Pass</i>
<b>Note</b>	Tested with 20 emulated voice (G.711) clients; aggregate roaming rate 60 per minute; minimum MOS > 4.0.

### 6.3.2 Access Point ensures fast roaming between Access Points without affecting call quality when encryption used is PSK

Required for qualification Yes

Description Access Point ensures fast roaming without affecting call quality when encryption used is PSK.

Test Case ID	Test Result
395103	<b>Pass</b>
<b>Note</b>	Tested with 20 emulated voice (G.711) clients; aggregate roaming rate 60 per minute; minimum MOS > 4.0.

## 6.5 REQUIREMENTS 3.2.8.4- 3.2.8.6: JITTER, DELAY AND PACKET LOSS DURING ROAMING

### 6.5.1 Access Point causes no more than 50ms jitter and delay and no more than 1% packet loss while roaming between Access Points

Required for qualification Yes

Description Access Point causes no more than 50ms jitter and delay and no more than 1% packet loss for a call where Lync End Point roams between Access Points.

Test Case ID	Test Result							
395130	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	1 msec	1 msec	2 msec	2 msec	0%	0%	4.23	4.21
<b>Note</b>								

### 6.5.2 Access Point causes delay of no more than 100ms when roaming between Access Points under maximum load

Required for qualification Yes

Description Access Point causes delay of no more than 100ms for a call where Lync End Point roams between Access Points under maximum load.

Test Case ID	Test Result							
395659	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	1 msec	1 msec	3 msec	2 msec	0%	0%	4.20	4.23
<b>Note</b>								

## 6.6 REQUIREMENT 3.2.8.6: PACKET LOSS DURING ROAMING

### 6.6.1 Access Point causes no more than 1% packet loss while roaming between Access Points

Required for qualification Yes

Description Access Point causes no more than 1% packet loss while roaming between Access Points.

Test Case ID	Test Result
395673	<b>Pass</b>

Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	1 msec	3 msec	2 msec	2 msec	0%	0%	4.12	4.08
Note								

## OPTIONAL

### CHECKLIST ITEMS

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#### 4.2 REQUIREMENT 3.2.1.1: 802.11A WI-FI CERTIFIED

##### 4.2.1 Access Point is 802.11a certified

Required for qualification Optional

Description The Access Point is WFA (Wi-Fi Alliance) certified for 802.11a and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
372937	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

#### 4.3 REQUIREMENT 3.2.1.2: 802.11G WI-FI CERTIFIED

##### 4.3.1 Access Point is 802.11g certified

Required for qualification Optional

Description The Access Point is WFA (Wi-Fi Alliance) certified for 802.11g and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
372940	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

#### 4.7 REQUIREMENT 3.2.1.9: POWER OVER GIGABIT ETHERNET

##### 4.7.1 Access Point supports Power Over Gigabit Ethernet (802.3af)

Required for qualification Optional

Description 802.11n capable Access Point has a usable Power over gigabit Ethernet interface that works.

Test Case ID	Supported / Not Supported	Reference
374191	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/ Documents/ staticfiles/AP-7131_Spec-Sheet_0910-web.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/ Documents/ staticfiles/AP-7131_Spec-Sheet_0910-web.pdf</a>

## 4.8 REQUIREMENT 3.2.1.10: IPv6 SUPPORT

### 4.8.1 Access Point and Controller must support IPv6 in hardware or software

Required for qualification Optional

Description Access Point and Controller must support IPv6 and must disclose whether it supports IPv6 packet forwarding in hardware or software.

Test Case ID	Supported / Not Supported	Reference
393044	<b>Supported</b>	<a href="https://docs.symbol.com/ReleaseNotes/Motorola_Enterprise_WLAN_WiNG_v5.2_Release_Notes_Access_Points_Public.pdf">https://docs.symbol.com/ReleaseNotes/Motorola_Enterprise_WLAN_WiNG_v5.2_Release_Notes_Access_Points_Public.pdf</a>

## 4.21 REQUIREMENT 3.2.7.2: FIPS 140-2 ACCREDITED FOR GOVERNMENT APPLICATIONS

### 4.21.1 Access Point is FIPS 140-2 accredited for government applications

Required for qualification Optional

Description The Access Point is FIPS 140-2 accredited for government applications and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394801	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/Documents/staticfiles/AP-7131-GR-SS-v4a-FIPsvalidated.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/WLAN%20Access%20Points/AP-7131/Documents/staticfiles/AP-7131-GR-SS-v4a-FIPsvalidated.pdf</a>

## 4.22 REQUIREMENT 3.2.7.3: HIPAA COMPLIANT FOR HEALTHCARE APPLICATIONS

### 4.22.1 Access Point is HIPAA compliant for healthcare applications

Required for qualification Optional

Description The Access Point is HIPAA compliant for healthcare applications and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394803	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/Documents/static%20files/EWLAN-At-A-Glance-Brochure.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/Documents/static%20files/EWLAN-At-A-Glance-Brochure.pdf</a>

## 4.23 REQUIREMENT 3.2.7.4: PCI COMPLIANT FOR APPLICATIONS REQUIRING FINANCIAL TRANSACTIONS

### 4.23.1 Access Point is PCI compliant for applications requiring financial transactions

Required for qualification Optional

Description The Access Point is PCI compliant for applications requiring financial transactions and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394804	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/Documents/static%20files/EWLAN-At-A-Glance-Brochure.pdf">http://www.motorolasolutions.com/web/Business/Products/Wireless%20LAN%20Devices/Documents/static%20files/EWLAN-At-A-Glance-Brochure.pdf</a>

## 4.24 REQUIREMENT 3.2.7.5: ICSA CERTIFIED FIREWALL

### 4.24.1 Access Point has a built in ICSA certified firewall

Required for qualification Optional

Description The Access Point incorporates an ICSA certified firewall and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394805	<b>Supported</b>	<a href="http://www.motorolasolutions.com/web/Business/Products/ Documents/WiNG-5-SpecSheet.pdf">http://www.motorolasolutions.com/web/Business/Products/ Documents/WiNG-5-SpecSheet.pdf</a>

## 6.8 REQUIREMENT 3.2.8.8: WFA MOBILE MULTIMEDIA CERTIFIED

### 6.8.1 Access Point is WFA Mobile Multimedia Certified

Required for qualification Optional

Description The Access Point is WFA Mobile Multimedia Certified and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394910	<b>Supported</b>	<a href="http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462">http://certifications.prod.wi-fi.org/pdf/certificate/public/download?cid=WFA13462</a>

## 6.9 REQUIREMENT 3.2.8.9: WFA VOICE ENTERPRISE (V-E) CERTIFIED

### 6.9.1 Access Point is WFA Voice Enterprise (V-E) Certified

Required for qualification Optional

Description The Access Point is WFA Voice Enterprise (V-E) Certified and partner has documented the same.

Test Case ID	Supported / Not Supported	Reference
394914	<b>Not Supported</b>	N/A

## 4 DATA

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## 4.3 REQUIREMENT 3.2.1.2: 802.11G WI-FI CERTIFIED

### 4.3.2 Access Point supports 802.11g operation

Required for qualification Optional

Description Access Point supports 802.11g operation.

Test Case ID	Test Result							
394116	<b>Pass</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	0 msec	2 msec	63 msec	37 msec	0.42%	0.14%	4.21	4.01

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Note	
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#### 4.6 REQUIREMENT 3.2.1.8: WIDE CHANNEL OPERATION

##### 4.6.1 Lync End Point1 makes a call to Lync End Point2 when 20 MHz and 40MHz channel width is enabled on 5GHz band

Required for qualification Optional

Description Access Point can support 802.11n client call over a 40 MHz wide channel when channel bonding is enabled on the Access Point.

Test Case ID	Test Result
374359	Pass
Note	

#### 4.7 REQUIREMENT 3.2.1.9: POWER OVER GIGABIT ETHERNET

##### 4.7.1 Access Point supports Power Over Gigabit Ethernet (802.3af)

Required for qualification Optional

Description 802.11n capable Access Point has a usable Power over gigabit Ethernet interface that works.

Test Case ID	Test Result
374191	Pass
Note	

#### 4.8 REQUIREMENT 3.2.1.10: IPV6 SUPPORT

##### 4.8.2 Access Point can handle calls when both IPv4 and IPv6 are enabled

Required for qualification Optional

Description Access Point can handle calls when both IPv4 and IPv6 are enabled and client supports only IPv4.

Test Case ID	Test Result							
394120	Pass							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
	1 msec	2 msec	2 msec	3 msec	0%	0%	4.24	4.20
Note								

#### 4.9 REQUIREMENT 3.2.2.4: BAND STEERING

##### 4.9.1 Access Point can steer dual band clients towards the 5GHz band when the client associates with the Access Point

Required for qualification Optional

Description Access Point steers to the 5GHz band a 5GHz capable client scanning congested 2.4GHz band when band steering is enabled.

Test Case ID	Test Result
375006	Pass

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<b>Note</b>	When there was no band preference configured on the client laptop, The AP steered the client to 5GHz. When there was band preference configured on the client laptop, the configured preference was honored and took precedence. The tested AP supports a configurable band steering persistence, so that it could be configured to override the band preference of client laptops, while still supporting single-band clients.
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#### 4.10 REQUIREMENT 3.2.2.5: SPECTRUM ANALYSIS

##### 4.10.1 Access Point can detect and display the source of interference on a channel

**Required for qualification** Optional

**Description** Spectrum analysis capabilities enables a data center operator to both look at in-band spectrum and identify the source of interference in English terms such as “Bluetooth device” or “microwave oven”.

<b>Test Case ID</b>	<b>Test Result</b>
374996	<b>Pass</b>
<b>Note</b>	Interference detection (which scans all channels) requires a dedicated radio. Tri-radio Motorola APs are available to support simultaneous dual-band operation and detection/scanning.

##### 4.10.2 Access Point can determine the category of interference on a channel in English terms

**Required for qualification** Optional

**Description** Access Point can determine the category of interference on a channel in English terms

<b>Test Case ID</b>	<b>Test Result</b>
375003	<b>Pass</b>
<b>Note</b>	Interference detection (which scans all channels) requires a dedicated radio. Tri-radio Motorola APs are available to support simultaneous dual-band operation and detection/scanning.

#### 4.16 REQUIREMENT 3.2.6.2: CLASSIFYING TRAFFIC ON A PER FLOW BASIS

##### 4.16.1 Access Point classifies untagged network inbound video traffic from Lync Server and tags it on the wireless interface to the client

**Required for qualification** Optional

**Description** Access Point classifies untagged network inbound video traffic and tags it on the wireless outbound interface.

<b>Test Case ID</b>	<b>Test Result</b>							
402490	<b>Not Tested – per direction from vendor.</b>							
<b>Lync QoE Results</b>	<b>Jitter</b>		<b>Round Trip Delay</b>		<b>Packet Loss</b>		<b>NMOS</b>	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
<b>Note</b>								

##### 4.16.2 Access Point classifies untagged network inbound voice only traffic from Lync Server and tags it on the wireless interface to the client

**Required for qualification** Optional

**Description** Access Point classifies untagged network inbound voice traffic and tags it on the wireless outbound interface.

Test Case ID	Test Result							
402491	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

### 4.16.3 Access Point classifies untagged wireless inbound video traffic from Lync End Point and tags it on the wired interface to Lync Server

Required for qualification Optional

Description Access Point classifies untagged wireless inbound video traffic and tags it on the wired outbound interface.

Test Case ID	Test Result							
402494	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

### 4.16.4 Access Point classifies untagged wireless inbound voice only traffic from Lync End Point and tags it on the wired interface to Lync Server

Required for qualification Optional

Description Access Point classifies untagged wireless inbound voice traffic and tags it on the wired outbound interface.

Test Case ID	Test Result							
402495	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

## 4.17 REQUIREMENT 3.2.6.4: REMAPPING PRIORITY TAGS

### 4.17.1 Access Point remaps incorrect 802.1p and DSCP tags from the network inbound voice traffic to WMM and DSCP tags on wireless outbound interface

Required for qualification Optional

Description Access Point remaps incorrect 802.1p and DSCP tags from the network inbound voice traffic to WMM and DSCP tags on wireless outbound interface based on the flow.

Test Case ID	Test Result							
394321	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller

Note	
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#### 4.17.2 Access Point remaps incorrect WMM and DSCP tags from wireless inbound video traffic to 802.1p and DSCP tags on network outbound interface

Required for qualification Optional

Description Access Point remaps incorrect WMM and DSCP tags from wireless inbound video traffic to 802.1p and DSCP tags on network outbound interface.

Test Case ID	Test Result							
394322	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

#### 4.17.3 Access Point remaps incorrect WMM and DSCP tags on wireless inbound voice traffic to 802.1p and DSCP tags on network outbound interface

Required for qualification Optional

Description Access Point remaps incorrect WMM and DSCP tags on wireless inbound voice traffic to 802.1p and DSCP tags on network outbound interface.

Test Case ID	Test Result							
394318	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

#### 4.17.4 Access Point/controller has the ability to retag incorrectly tagged voice only traffic from the wired interface with the correct DSCP and WMM tags for voice traffic on the wireless interface

Required for qualification Optional

Description Access Point remaps incorrect 802.1p and DSCP tags from the network inbound voice and video traffic to the correct WMM and DSCP tags on wireless outbound interface based on the flow.

Test Case ID	Test Result							
394325	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

#### 4.18 REQUIREMENT 3.2.6.8: SHAPING DATA TRAFFIC QUEUE

##### 4.18.1 Video call quality is not affected with Data traffic shaping enabled

Required for qualification Optional

Description Video call quality is not affected with Data traffic shaping enabled.

Test Case ID	Test Result							
394354	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	Tested AP supports priority queueing per WMM standards, and allows flexible tuning of queueing parameters such as AIFSN and ECW, but does not support additional traffic shaping.							

##### 4.18.2 Voice call quality is not affected with Data traffic shaping enabled

Required for qualification Optional

Description Voice call quality is not affected with Data traffic shaping enabled.

Test Case ID	Test Result							
394345	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	Tested AP supports priority queueing per WMM standards, and allows flexible tuning of queueing parameters such as AIFSN and ECW, but does not support additional traffic shaping.							

#### 4.19 REQUIREMENT 3.2.6.9: PRIORITIZING SIP TLS

##### 4.19.1 Access Point prioritizes untagged SIP TLS traffic from the network over any other traffic type under full congestion

Required for qualification Optional

Description Access Point prioritizes untagged SIP TLS traffic from the network over any other traffic type under full congestion.

Test Case ID	Test Result							
399194	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

##### 4.19.2 Access Point prioritizes untagged SIP TLS traffic from the WLAN over any other traffic type under full congestion

Required for qualification Optional

Description Access Point prioritizes untagged SIP TLS traffic from the WLAN over any other traffic type under full congestion.

Test Case ID	Test Result							

396408	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

#### 4.20 REQUIREMENT 3.2.7.1: ENCRYPTION SUPPORT

##### 4.20.2 Access Point supports WPA2-TKIP Encryption

Required for qualification Optional

Description Access Point supports WPA2-TKIP Encryption.

Test Case ID	Test Result
394800	<b>Pass</b>
Note	

##### 4.20.3 Access Point supports WPA-AES Encryption

Required for qualification Optional

Description Access Point supports WPA-AES Encryption.

Test Case ID	Test Result
394794	<b>Not Tested – per direction from vendor.</b>
Note	

## 5 NOMADIC

#### 5.10 REQUIREMENT 3.2.6.10: PROTECTING EXISTING CALL QUALITY

##### 5.10.1 Existing call quality is not affected when a new call is made through a fully loaded Access Point

Required for qualification Optional

Description Existing call quality is not affected when a new call is made through a fully loaded Access Point.

Test Case ID	Test Result							
394361	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note	Tested AP does not support CAC on Lync calls.							

## 6 MOBILITY

### 6.3 REQUIREMENT 3.2.8.2: FAST ROAMING

#### 6.3.3 Access Point ensures fast roaming without affecting call quality when roaming between controller/Access Points in different subnets

Required for qualification Optional

Description Access Point ensures fast roaming without affecting call quality when roaming between controller/Access Points in different subnets.

Test Case ID	Test Result
395125	<i>Pass</i>
<b>Note</b>	Tested with 20 emulated voice (G.711) clients; aggregate roaming rate 60 per minute; with all clients starting on the same subnet as the wired destinations; minimum MOS > 4.0,

### 6.4 REQUIREMENT 3.2.8.3: EFFICIENT ROAMING WITH ACCESS POINT ASSISTED HANDOFF

#### 6.4.1 Access Point supports efficient roaming with Access Point assisted handoff

Required for qualification Optional

Description Access Point supports efficient roaming with Access Point assisted handoff. The test verifies that roam time is less with AP assisted handoff.

Test Case ID	Test Result
395127	<i>Not Tested – not applicable.</i>
<b>Note</b>	Tested AP does not have an “AP assisted handoff” feature that can be enabled/disabled to affect clients who were connected before the feature was enabled. Tested AP supports opportunistic PMK to help fast roaming, and this is already covered in other test cases.

### 6.7 REQUIREMENT 3.2.8.7: BROADCAST LOAD INDICATIONS 802.11V QBSS TRANSITION MGMT. FRAMES

#### 6.7.1 Access Point broadcasts channel load information in beacon and probe response frames when QBSS is enabled

Required for qualification Optional

Description Access Point broadcasts channel load information in beacon and probe response frames during a Lync call when QBSS is enabled. (Although this is an Access Point feature, the intent is to test Lync interop when the Access Point feature is enabled, hence the need to test this feature with a Lync call and measure its impact on call quality).

Test Case ID	Test Result
395970	<i>Pass</i>
<b>Note</b>	Tested with multiple emulated clients and traffic flows to verify that the advertised QBSS parameters (Station Count, Channel Utilization, and Available Admission Capabilities) do reflect the current conditions of the AP.

# **NOT REQUIRED**

## **4.11 REQUIREMENT 3.2.3.1: LOGGING**

### **4.11.1 Access Point generates session logs with session details**

**Required for qualification** No

**Description** Access Point generates session logs with session details such as duration, timestamp, originator and terminator.

Test Case ID	Test Result
376815	<b><i>Not Tested – per direction from vendor.</i></b>
<b>Note</b>	

## **4.12 REQUIREMENT 3.2.3.2: RF COVERAGE MAPS**

### **4.12.1 WLAN solution can identify client's location and past roaming history**

**Required for qualification** No

**Description** WLAN solution can identify client's location Access Point it is connected to and past roaming history.

Test Case ID	Test Result
376974	<b><i>Pass</i></b>
<b>Note</b>	Roaming (AP association) is available. XY location is not available.

### **4.12.2 WLAN solution displays RF coverage heat maps in the 2.4 GHZ spectrum**

**Required for qualification** No

**Description** WLAN solution displays RF coverage heat map for Access Point on the 2.4GHz spectrum

Test Case ID	Test Result
376929	<b><i>Pass</i></b>
<b>Note</b>	This is available through additional software installed on the controller. (More details can be added.)

### **4.12.3 WLAN solution displays RF coverage heat maps in the 5GHz spectrum**

**Required for qualification** No

**Description** WLAN solution displays RF coverage heat map for Access Point on the 5GHz spectrum

Test Case ID	Test Result
376942	<b><i>Pass</i></b>
<b>Note</b>	This is available through additional software installed on the controller. (More details can be added.)

## **4.13 REQUIREMENT 3.2.3.3: ABILITY TO DISTINGUISH VOICE/VIDEO FROM DATA SESSIONS VIA LOGS OR COVERAGE MAPS**

### **4.13.1 Access Point logs should specify a voice call as such in the logs**

**Required for qualification** No

**Description** Access Point logs should specify a voice call as such in the logs

Test Case ID	Test Result
376755	<b><i>Not Tested – per direction from vendor.</i></b>

Note	
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#### 4.13.2 Access Point should be able to distinguish voice video from data sessions

Required for qualification No

Description Access Point should be able to distinguish voice video from data sessions.

Test Case ID	Test Result							
376812	<b>Not Tested – per direction from vendor.</b>							
Lync QoE Results	Jitter		Round Trip Delay		Packet Loss		NMOS	
	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller	Caller -> Callee	Callee -> Caller
Note								

#### 4.14 REQUIREMENT 3.2.4.1: FAIR DISTRIBUTION OF AIR TIME AMONG CLIENTS WITH DIFFERENT SPEEDS

##### 4.14.1 Lync End Points with the same capability transmitting at different speeds have better throughput with air time fairness enabled in the 2.4 GHz band

Required for qualification No

Description With air time fairness enabled 802.11n and 802.11b/g clients on the same frequency band have better throughput than with air time fairness turned off.

Test Case ID	Test Result
391743	<b>Pass</b>
Note	Tested with groups of emulated clients at different speeds to verify air time fairness.

##### 4.14.2 Lync End Points with the same capability transmitting at different speeds have better throughput with air time fairness enabled in the 5GHz band

Required for qualification No

Description With air time fairness enabled 802.11n and 802.11a clients on the same frequency band have better throughput than with air time fairness turned off.

Test Case ID	Test Result
391836	<b>Pass</b>
Note	Tested with groups of emulated clients at different speeds to verify air time fairness.

##### 4.14.3 802.11n performance is not penalized in network with a higher percentage of legacy clients when Air Time Fairness is enabled

Required for qualification No

Description With air time fairness enabled 802.11n performance is not penalized in a network with higher percentage of legacy clients.

Test Case ID	Test Result
391776	<b>Pass</b>
Note	Tested with groups of emulated clients at different speeds to verify air time fairness. Note that WMM priority queues operate at the front end, so that priority traffic always has preferential treatment regardless of air time fairness.

##### 4.14.4 QoS is media aware and does not degrade the quality of the Lync calls

Required for qualification No

Description With air time fairness enabled Lync call quality is improved.



Test Case ID	Test Result
414580	<b>Pass</b>
<b>Note</b>	Note that WMM priority queues operate at the front end, so that priority traffic always has preferential treatment regardless of air time fairness.

#### 4.25 REQUIREMENT 3.2.7.6: QUARANTINING MISBEHAVING CLIENTS

##### 4.25.1 WLAN can detect and quarantine clients duplicating IP addresses

**Required for qualification** No

**Description** WLAN can detect and prevents clients spoofing IP addresses from connecting to the network.

Test Case ID	Test Result
396088	<b>Not Tested – per direction from vendor.</b>
<b>Note</b>	