

**TECHNICAL SPECIFICATION
SUPPLY OF WIRELESS ACCESS POINT**

Unit: _____

(TYPE A: LESS THAN 20 PEOPLE)

Type A Wireless Access point is suitable for small-density deployment for up to 20 people, such as classrooms and small meeting rooms.

No.	SPECIFICATION	VENDORS PROPOSAL	COMPLIANCE (YES/NO)
Type A	WIRELESS ACCESS POINT		
Network Capabilities	Supply Wireless Access Point 802.11ax wave 2 <ul style="list-style-type: none"> ▪ AP type: Indoor, minimum dual radio, 5GHz 802.11ax 4x4 MIMO and 2.4GHz 802.11n 2x2 MIMO. ▪ Minimum One 10/100/1000BASE-T Ethernet network interface (RJ-45) <ul style="list-style-type: none"> ✓ 2.5Gbps speed complies with NBase-T and 802.3bz specifications ✓ Auto-sensing link speed and MDI/MDX ✓ PoE-PD: 48Vdc (nominal) 802.3af/at/bt (class 3 or higher) ✓ 802.3az Energy Efficient Ethernet (EEE) ▪ 5GHz 4x4 MIMO (4.8 Gbps max rate) and 2.4GHz 2x2 MIMO (575 Mbps max rate) radios, with a total of three integrated omnidirectional down-tilt dual-band antennas. ▪ Compatible with IIUM's existing Wireless Controller <ul style="list-style-type: none"> ✓ Aruba Mobility Controller 7240XM ✓ Aruba OS 8.6.0.15 		
Uplink	Supply Cabling together with each access point installed. The cable type is UTP Cat6 (AMP or Equivalent quality)		
Accessories	Supply accessories per access point will include stated below unless stated otherwise: <ul style="list-style-type: none"> ▪ Access Point ceiling mounting ▪ Built-in antenna ▪ Access Point license that supports Policy Enforcement ▪ Proprietary console cable ▪ Power Injector for POE+ power requirement. ▪ Label and tagging at both ends 		

*This specification has been endorsed at the **Technical Specification Endorsement meeting** dated **11th August 2023** – “IIUM Access Point update.”

Base Warranty	<p>Provide Support and Warranty for hardware and software.</p> <ul style="list-style-type: none"> ▪ Must come with minimum 1 YEAR support and limited lifetime product warranty by principal. 		
Documentation	<ul style="list-style-type: none"> • SSM Letter (Form 9, company profile) • Bank statements (ending balance for 3 Months) • MOF certificate • Letter from the principal for all supplied items • Heatmap before and after installation • FAT and UAT for all supplied items 		
Penalty	<p>In the event the vendor fails to install the Product within the Installation Period, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the installation/ relocation is complete; and/or</p>		
	<p>In the event the vendor fails to replace the faulty Product after one (1) working day, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the replacement is complete; and/or</p> <p>(b) If necessary by IIUM, the right to purchase the replacement of the Product from another source and the said replacement shall not exceed the specification described in the Agreement.</p>		
	<p>In the event the vendor fails to meet SLA, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per hour until the Products are restored</p>		
<p>PIC INFORMATION</p> <p>Name:</p> <p>Telephone No. :</p> <p>Email:</p>		<p><i>PIC SIGNATURE & COMPANY STAMP</i></p>	

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**TECHNICAL SPECIFICATION
SUPPLY OF WIRELESS ACCESS POINT**

Unit: _____

(TYPE B: UP TO 40 PEOPLE)

Type B Wireless Access Point is suitable for unobstructed Medium Density deployment for up to 40 people such as medium Offices and open spaces.

No.	SPECIFICATION	VENDORS PROPOSAL	COMPLIANCE (YES/NO)
Type B	WIRELESS ACCESS POINT		
Network Capabilities	Supply Wireless Access Point 802.11ax wave 2 <ul style="list-style-type: none"> ▪ AP type: Indoor, minimum dual radio, 5GHz 802.11ax 4x4 MIMO and 2.4GHz 802.11n 4x4 MIMO. ▪ Minimum One 100/1000/2500/5000BASE-T Ethernet network interface (RJ-45) <ul style="list-style-type: none"> ✓ 2.5Gbps and 5Gbps speeds comply with NBase-T and 802.3bz specifications ✓ Auto-sensing link speed and MDI/MDX ✓ POE-PD: 48Vdc (nominal) 802.3at/bt POE (class 4 or higher) ✓ 802.3az Energy Efficient Ethernet (EEE) ▪ 5 GHz (2.4 Gbps max rate) and 2.4 GHz (1,147 Mbps max rate) radios, each with 4x4 MIMO support and a total of eight integrated omnidirectional down-tilt antennas. ▪ Compatible with IIUM's existing Wireless Controller (minimum) <ul style="list-style-type: none"> ✓ Aruba Mobility Controller 7240XM ✓ Aruba OS 8.6.0.15 		
Uplink	Supply Cabling together with each access point installed. The cable type is UTP Cat6 (AMP or Equivalent quality)		
Accessories	Supply accessories per access point will include stated below unless stated otherwise: <ul style="list-style-type: none"> ▪ Access Point ceiling mounting ▪ Built-in antenna 		

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	<ul style="list-style-type: none"> ▪ Access Point license that supports Policy Enforcement ▪ Proprietary console cable ▪ Power Injector for POE+ power requirement. ▪ Label and tagging at both end 		
Base Warranty	<p>Provide Support and Warranty for hardware and software.</p> <ul style="list-style-type: none"> ▪ Must come with minimum 1 YEAR support and limited lifetime product warranty by principal. 		
Documentation	<ul style="list-style-type: none"> • SSM Letter (Form 9, company profile) • Bank statements (ending balance for 3 Months) • MOF certificate • Letter from the principal for all supplied items • Heatmap before and after installation • FAT and UAT for all supplied items 		
Penalty	<p>In the event the vendor fails to install the Product within the Installation Period, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the installation/ relocation is complete; and/or</p>		
	<p>In the event the vendor fails to replace the faulty Product after one (1) working day, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the replacement is complete; and/or</p> <p>(b) If necessary by IIUM, the right to purchase the replacement of the Product from another source and the said replacement shall not exceed the specification described in the Agreement.</p>		
	<p>In the event the vendor fails to meet SLA, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per hour until the Products are restored</p>		
<p>PIC INFORMATION</p> <p>Name: Telephone No. : Email:</p>		<p><i>PIC SIGNATURE & COMPANY STAMP</i></p>	

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**TECHNICAL SPECIFICATION
SUPPLY OF WIRELESS ACCESS POINT**

Unit: _____

(TYPE C: UP TO 100 PEOPLE)

Type C Wireless Access Point is suitable for High Density deployment for up to 100 people such as Conference Hall or Lecture Hall.

No.	SPECIFICATION	VENDORS PROPOSAL	COMPLIANCE (YES/NO)
Type C	WIRELESS ACCESS POINT		
Network Capabilities	Supply Wireless Access Point 802.11ax wave 2 <ul style="list-style-type: none"> ▪ AP type: Indoor, minimum dual radio, 5GHz 802.11ax 8x8 MIMO and 2.4GHz 802.11n 4x4 MIMO. ▪ Minimum One 100/1000/2500/5000BASE-T Ethernet network interface (RJ-45) <ul style="list-style-type: none"> ✓ 2.5Gbps and 5Gbps speeds comply with NBase-T and 802.3bz specifications ✓ Auto-sensing link speed and MDI/MDX ✓ POE-PD: 48Vdc (nominal) 802.3at/bt POE (class 4 or higher) ▪ With 8x8 MIMO support 5 GHz (4.8 Gbps max rate) and with 4x4 MIMO support 2.4 GHz (1,150 Mbps max rate) radios, each and a total of eight integrated omnidirectional down-tilt antennas. ▪ Compatible with IIUM existing Wireless Controller (minimum) <ul style="list-style-type: none"> ✓ Aruba Mobility Controller 7240XM ✓ Aruba OS 8.6.0.15 		
Uplink	Ensure that the AP is included together with the following requirements whether existing in current environment or included alongside the technical specification: <ul style="list-style-type: none"> ▪ Supply Cabling together with each access point installed. The cable type is UTP Cat6A (AMP or Equivalent quality) Requires uplink MultiGIG switch		
Accessories	Supply accessories per access point will include stated below unless stated otherwise: <ul style="list-style-type: none"> ▪ Access Point ceiling mounting 		

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	<ul style="list-style-type: none"> ▪ Built in antenna. ▪ Access Point license that supports Policy Enforcement ▪ Proprietary console cable ▪ Power Injector for POE+ power requirement. ▪ Label and tagging at both ends 		
Base Warranty	<p>Provide Support and Warranty for hardware and software.</p> <ul style="list-style-type: none"> ▪ Must come with minimum 1 YEAR support and limited lifetime product warranty by principal. 		
Documentation	<ul style="list-style-type: none"> • SSM Letter (Form 9, company profile) • Bank statements (ending balance for 3 Months) • MOF certificate • Letter from principal for all supplied items • Heatmap before and after installation • FAT and UAT for all supplied items 		
Penalty	<p>In the event the vendor fails to install the Product within the Installation Period, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the installation/ relocation is complete; and/or</p>		
	<p>In the event the vendor fails to replace the faulty Product after one (1) working day, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per day until the replacement is complete; and/or</p> <p>(b) If necessary by IIUM, the right to purchase the replacement of the Product from another source and the said replacement shall not exceed the specification described in the Agreement.</p>		
	<p>In the event the vendor fails to meet SLA, IIUM shall have the rights against the vendor as follows:</p> <p>(a) A penalty of RMXXX per unit per hour until the Products are restored</p>		
<p>PIC INFORMATION</p> <p>Name: Telephone No. : Email:</p>		<p><i>PIC SIGNATURE & COMPANY STAMP</i></p>	

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