

Sesona Kibi

From: Lungisa Mpati <lungisa@emcol.co.za>
Sent: Wednesday, 27 November 2024 21:43
To: Sesona Kibi
Subject: RE: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTIC

Good Evening

This is to confirm that I have attended the meeting and I had no personal interest on the matters before the committee.

L Mpati
BSC Member

From: Sesona Kibi <sesona@emcol.co.za>
Sent: Wednesday, November 27, 2024 8:44 AM
To: Lester Moos <lester@emcol.co.za>; Lungisa Mpati <lungisa@emcol.co.za>; Feronica de Vos <feronica@emcol.co.za>; Thareef Bloew <thareef@emcol.co.za>
Subject: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Day Committee Members,

With reference to the BSC meeting held on the 26 November 2024 at 14:00 via SKYPE, attached is the final BSC report for:

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

As agreed at the meeting all BSC members are required to do the following:

1. Declaration of Attendance of above-mentioned meeting by responding to this mail
I declare.
2. Declaration of Interest, Confidentiality & Impartiality by responding to this mail
 - *I declare that I did not purposefully unlawfully favour prejudice anyone in the procurement process (invitation, evaluation, recommendation or award of bid of the Code of Conduct C4.5 to C4.12 and C5.3 to C5.4 of the Public Service.*
 - *I, the undersigned, accept that all information, documentation and decisions regarding any matter serving before the Committee are confidential. I, therefore, undertake not to make known anything in this regard.*
 - *I also declare that I will not purposefully favour or prejudice anybody.***I declare.**
3. Declaration and Approval that attached BSC reports (minutes & approved Request for Approval) is a true reflection of the meeting held via SKYPE on 26 November 2024.
I declare.

Kind Regards

SESONA KIBI
SUPPLY CHAIN MANAGEMENT CLERK
Landline: +27 (041) 995 2051 | Fax: 041 995 2047
Email: sesona@emcol.co.za | Web-site: www.emcol.co.za

Sesona Kibi

From: lester moos <lester@emcol.co.za>
Sent: Wednesday, 27 November 2024 01:16
To: 'Sesona Kibi '
Subject: RE: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS
Attachments: MINUTES FOR RFQ-SCM EMC 28-24-.pdf

Good day Kibi

Find this email as my declaration as I have nothing to declare

 <p>higher education & training Department High Education and Training REPUBLIC OF SOUTH AFRICA</p>	 <p>Eastcape Midlands TVET College EMC creating new futures</p>	<p>Lester Moos Campus Manager : Graaff-Reinet Campus T: 049 891 0201 C: 0682728147 E: lester@emcol.co.za W: www.emcol.co.za</p>
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From: Sesona Kibi <sesona@emcol.co.za>
Sent: Wednesday, 27 November 2024 08:44
To: 'lester moos' <lester@emcol.co.za>; 'Lungisa Mpati' <lungisa@emcol.co.za>; 'Feronica de Vos' <feronica@emcol.co.za>
Subject: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Day Committee Members,

With reference to the BSC meeting held on the 26 November 2024 at 14:00 via SKYPE, attached is the final BSC report for:

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

As agreed at the meeting all BSC members are required to do the following:

1. Declaration of Attendance of above-mentioned meeting by responding to this mail

Sesona Kibi

From: Thareef Bloew <thareef@emcol.co.za>
Sent: Wednesday, 27 November 2024 11:10
To: 'Sesona Kibi '
Subject: RE: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Good day

I declare to points 1, 2 and 3.

Regards

From: Sesona Kibi <sesona@emcol.co.za>
Sent: Wednesday, 27 November 2024 08:44
To: 'lester moos' <lester@emcol.co.za>; 'Lungisa Mpati' <lungisa@emcol.co.za>; 'Feronica de Vos' <feronica@emcol.co.za>
Subject: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Day Committee Members,

With reference to the BSC meeting held on the 26 November 2024 at 14:00 via SKYPE, attached is the final BSC report for:

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

As agreed at the meeting all BSC members are required to do the following:

1. Declaration of Attendance of above-mentioned meeting by responding to this mail
I declare.
2. Declaration of Interest, Confidentiality & Impartiality by responding to this mail
 - *I declare that I did not purposefully unlawfully favour prejudice anyone in the procurement process (invitation, evaluation, recommendation or C4.12 and C5.3 to C5.4 of the Public Service.*
 - *I, the undersigned, accept that all information, documentation and decisions regarding any matter serving before the Committee are confidential in this regard.*
 - *I also declare that I will not purposefully favour or prejudice anybody.***I declare.**
3. Declaration and Approval that attached BSC reports (minutes & approved Request for Approval) is a true reflection of the meeting

Sesona Kibi

From: Feronica de Vos <feronica@emcol.co.za>
Sent: Wednesday, 27 November 2024 12:06
To: Sesona Kibi
Subject: RE: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Good day Kibi,

Kindly be advised that I declare to items 1, 2 & 3.

Thank you.

Regards

 <p>higher education & training Department: Higher Education and Training REPUBLIC OF SOUTH AFRICA</p>	 <p>Eastcape Midlands TVET College EMC</p>	<p>Feronica De Vos Senior MIS Officer T: 041 996 1800 E: feronica@emcol.co.za W: www.emcol.co.za</p>
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From: Sesona Kibi <sesona@emcol.co.za>
Sent: Wednesday, 27 November 2024 08:44
To: Lester Moos <lester@emcol.co.za>; Lungisa Mpati <lungisa@emcol.co.za>; Feronica de Vos <feronica@emcol.co.za>;
Subject: Declaration: RFQ/SCM EMC 28/24 - SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Day Committee Members,

With reference to the BSC meeting held on the 26 November 2024 at 14:00 via SKYPE, attached is the final BSC report for:

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

As agreed at the meeting all BSC members are required to do the following:



**BID SPECIFICATION COMMITTEE HELD ON TUESDAY, 26 NOVEMBER 2024
VIA SKYPE**

AGENDA

1. OPENING AND WELCOME
2. ATTENDENCE
3. DECLARATION OF INTEREST
4. MATTERS TO BE TABLED

4.1 RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

- 4.1.1 TYPE OF PROJECT
- 4.1.2 CONFIRMATION OF BUDGET
- 4.1.3 ADVERTISEMENT
- 4.1.4 BID SPECIFICATIONS
- 4.1.5 ADDITIONAL REQUIREMENTS

5. RECOMMENDATION

6. CLOSURE

**BID SPECIFICATION COMMITTEE HELD ON TUESDAY, 26 NOVEMBER 2024
VIA SKYPE**

1. OPENING AND WELCOME

2. ATTENDANCE

The confirmation of attendance was done via SKYPE.
In addition, committee members were required to confirm attendance via email.

3. DECLARATION OF INTEREST

Committee members were required to formally declare interests via email.

4. MATTERS TO BE DISCUSSED

4.1 TYPE OF PROJECT

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

4.2 CONFIRMATION OF BUDGET/FUNDS/APPROVAL

4.2.1. Financial Approval

The budget was approved and signed by, Mr N Momoza, Deputy Principal Finance / CFO on 21/11/2024 – see attached appendix.

4.2.2. Accounting Officer Approval

Mr Van Heerden approved and signed on 22/11/2024 – see attached appendix.

4.3 ADVERTISEMENT

RFQ/SCM EMC 28/24 – SOURCING OF SERVICE PROVIDER FOR ROBOTICS

4.4 BID SPECIFICATIONS

The Bid Specification and evaluation criteria are attached hereto

4.5 ADDITIONAL REQUIREMENTS

NONE

5 RECOMMENDATION

BSC committee approved with no objection.

MINUTES APPROVED BY:



CHAIRPERSON
BID SPECIFICATION COMMITTEE

27/11/2024

DATE

COMMENTS:

BID SPECIFICATION COMMITTEE MEMBERS (RFQ/SCM EMC 28/24)

NAME

SIGNATURE

DATE

NAME

SIGNATURE

DATE

NAME

SIGNATURE

DATE

RFW/SCM EMC 23/24



SCM-022

REQUEST FOR APPROVAL – RFQ / RFP / BID

- **Request for Quotation (RFQ) : R2000 – R200 000**
Reviewed by AD: SCM, campus/depart manager, end-user rep,
- **Request for Quotation (RFQ) : R200 001 – R500 000**
Reviewed by BEC, BAC, approval by Accounting Officer
- **Competitive bid: R500 001 – R1 000 000**
Reviewed by BEC, BAC, approval by Accounting Officer
- **Competitive bid: R1 000 000 – And above**
Reviewed by BEC, BAC, approval by Accounting Officer

SOURCING OF SERVICE PROVIDER FOR ROBOTICS

Procurement method: RFQ RFP BID. Estimated delivery date: 30 April 2025

Shorter Bidding 3DAY 7DAY

1. BACKGROUND

The merSETA and Eastcape Midlands TVET College (EMC) signed a Memorandum of Understanding (MOU) on October 31, 2018 to establish a 4th Industrial Revolution: Eastcape Midlands TVET College Learning Factory (EMCOL-LF) to support the institutional strategic goal of teaching unemployed youth, semi-skilled and skilled employees in technologies connected to the Fourth Industrial Revolution

2. PURPOSE

To source service provider for the mechatronic training system which includes physical infrastructure, controlling software, mechanical and electrical diagrams supply, data collection, training, installation, maintenance, support and curriculum for technologies.

3. SPECIFICATION(S)

Detailed specifications and conditions attached for

- Articulated Robot station
- Cobot station



13. ACCOUNTING OFFICER/AUTHORISED DELEGATE

(copy of delegation to be attached)

Based on the above background approval is requested for the **Request for Bid:**

NOT APPROVED / APPROVED BY:


ACCOUNTING OFFICER or
AUTHORISED DELEGATE

25/11/2024
DATE

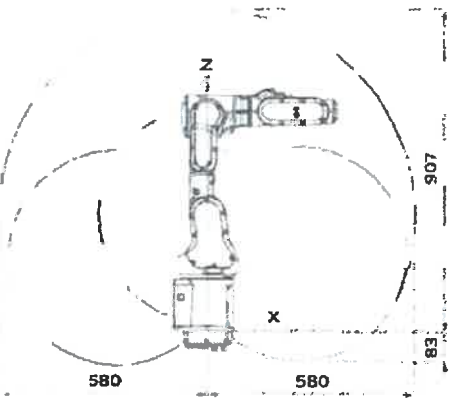
COMMENTS:





Details Specifications

A. Articulated Robot Station

EXAMPLE	QUANTITY REQUIRED	
	<p>1x Articulated Robot</p>	
Articulated Robot Station Specifications		
Specifications	Reach Payload 4kg Armload Number of axes 6 Protection Mounting Controller Integrated signals Integrated air supply Integrated ethernet	580mm 0.5kg IP40 Any angle Yes with Profinet 8 Inputs and 8 Outputs on wrist 2 on wrist One 1000 Base T ethernet port
Performance	PR PS time 0.19 Seconds Path repeatability	0.01mm 0.05mm
Robot Tooling	<ul style="list-style-type: none"> • Gripper 1: Electrical 2 point with 10mm Travel controlled via Profinet. • Gripper 2 : Vacuum gripper with vacuum generator and control valve. 	

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	All associated equipment required for the operation of the system i.e. Cables, Teach Pendant etc.
Frame	<p>Dimensions (lxbxh): 1500 x 1400x 900mm</p> <p>Robot to be mounted on an extruded aluminum frame with 4 x lockable casters. Extruded aluminum safety enclosure (3 sides) mounted on top of the aluminum frame and CAT 4 light curtains mounted on the front of the safety enclosure.</p> <p>Tower Light (Red/Green/Orange/Blue/Buzzer) IO link type. Pneumatic filter regulator with a manually operated isolating valve (lockable in the exhaust position) fitted with both an analog gauge (0 to 10 bar) and a Digital Pressure Gauge (0 to 10 Bar with a 0 to 10V analog output), a soft startup valve.</p> <p>Robot to be enclosed on three sides.</p>
Control Panel	<p>Control panel to be housed in the frame. Control panel colour RAL7035.</p> <p>Panel doors to be constructed from polycarbonate.</p> <p>Panel to be fitted with an easily accessible mains Isolator.</p>
Control System	<ul style="list-style-type: none">• Supply Voltage 220Volt Single phase• Pneumatic supply 5 Bar• PLC with the following base specifications:<ul style="list-style-type: none">Like " Siemens "S 7-1511-1PN7" HMI KTP700 with Profinet port<ul style="list-style-type: none">o PLC to have 20% spare I/O• 8 port switch 10/100.• E-Stop with safety relay.• 16 Fault simulator switches (lockable).• 24V 120W Power Supply (control voltage).• Wiring to the control panel to be terminated into terminal blocks and not wired directly into the PLC.• Operator panel to include the following functions: Inch Button, Start Button, Auto/Manual Selector switch, Home Button, Control Power on/off button and Emergency switch (rotate to release) button.
Applications	The system is to be supplied with 3 x Robotic training applications.



Application 1 – Glue Bead path Templates training aids

- 5 x Glue bead templates Size 300mm x 300mm x 20mm White nylon.
Glue bead template to have a 1mm wide x 1mm deep slot machined into the nylon.
The slot to be filled with black paint.
Bases to fit into a nest located in front of the robot.
The 5 x Glue bead templates to have different patterns

Application 2 – Material Composition and packing application

- 15 x Bases of size 60mm x 60mm x 20mm (10 off Aluminium and 5 off white nylon)
Two trays with cutouts for the blocks to be supplied.
Blocks to be arranged in a 3 x 5 format.
Trays to be removable from the deck.
Tray to have 2 x handles located on either side of the tray.
The tray is to fit into a nest located on the deck.
The nests are to be located either side of the Robot.
Two proximity sensors to be mounted to the deck.
1 x Inductive (4mm sensing)
1 x Capacitive (4mm sensing)
The robot will present the block to the sensors. The robot will then pack the blocks on the packing tray according to the material composition.

Application 3 - Drawing and Writing


- It will include a whiteboard, a pen and a penholder from which the robotic arm will pick and store the pen without human interaction. The user will be able to perform activities related to writing and drawing with the robotic arm
- Station to be supplied with all Mechanical Drawings (both General Arrangement 3D, General Arrangement with exploded 3D views and detailed drawings of all mechanical parts)



Additional Requirements

- Station to be supplied with all Electrical Drawings. All wiring to be numbered and colour coded according to international accepted standards.
- Station to be supplied assembled and including software applicable to the supplied robot.
- All sensors to be of the plugin M8 or M12 type.
- Station to be supplied with an operator's manual in English. Manual to include a FMEA of the equipment, maintenance schedule, and a list of all parts on the station. The list to include the suppliers name, part number and cost.

B. Cobot Station

EXAMPLE	QUANTITY REQUIRED				
	<p>1x Cobot Station</p>				
Cobot station					
<p>Specifications</p>	<table border="0"> <tr> <td>Payload</td> <td>3-4kg</td> </tr> <tr> <td>Reach</td> <td>500mm</td> </tr> </table>	Payload	3-4kg	Reach	500mm
Payload	3-4kg				
Reach	500mm				

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	<p>Degrees of freedom Programming</p> <p>Operating temperature range</p> <p>Compliance 10218-1</p> <p>Typical TCP Speed</p> <p>Repeatability</p>	<p>6 Rotating joints</p> <p>12" touchscreen with PolyScope graphical user interface</p> <p>0 - 50°C</p> <p>EN ISO 13849-1 and EN ISO</p> <p>1m/s</p> <p>+/- 0.03mm</p>
Control box	<p>Digital inputs</p> <p>Digital Outputs</p> <p>Analog Inputs</p> <p>Analog outputs</p> <p>Quadrature Digital Inputs</p> <p>Communication</p> <p>Power Source</p>	<p>16</p> <p>16</p> <p>2</p> <p>2</p> <p>4</p> <p>Profinet</p> <p>100 – 240Vac 50 Hz</p>
Gripper	<p>Electrical 2 point with 10mm Travel controlled via Profinet.</p> <p>All associated equipment required for the operation of the system i.e. Cables, Teach Pendant and etc.</p>	
Frame	<p>Dimensions (lxbxh): 1500 x 1400x 900mm</p> <p>Extruded aluminium frame fitted with 4 x casters of which 2 must be braked casters.</p> <p>Tower Light (Red/Green/Orange/Blue/Buzzer) IO link type.</p> <p>Pneumatic filter regulator with a manually operated isolating valve (lockable in the exhaust position) fitted with both an analog gauge (0 to 10 bar) and a Digital Pressure Gauge (0 to 10 Bar with a 0 to 10V analog output), a soft startup valve.</p> <p>Cobot to be enclosed on three sides.</p>	
Control Panel	<p>Control panel to be housed in the frame. Control panel colour RAL7035.</p> <p>Panel doors to be constructed from polycarbonate.</p> <p>Panel to be fitted with an easily accessible Mains Isolator.</p> <ul style="list-style-type: none"> • Supply Voltage 220Volt Single phase. • Pneumatic supply 5 Bar. • PLC with the following base specifications: 	



Control System

- Working memory 100Kb, CPU processing time 0.085uS/instruction, Supply voltage 24Vdc, Retentive data area 10Kb, with RTC and Profinet interface.
- 7" HMI with Profinet port. PLC to have 20% spare I/O.
- 8 port switch 10/100
- E-Stop with safety relay.
- 16 Fault simulator switches (lockable).
- 24V 120W Power Supply (control voltage).
- Wiring to the control panel to be terminated into terminal blocks and not wired directly into the PLC.
- Operator panel to include the following functions: Inch Button, Start Button, Auto/Manual Selector switch, Home Button, Control Power on/off button and Emergency switch (rotate to release) button.

Application

The system is to be supplied with 3 x Robotic training applications.

Application 1 – Glue Bead path Templates training aids

- 5 x Glue bead templates Size 300mm x 300mm x 20mm White nylon.
Glue bead template to have a 1mm wide x 1mm deep slot machined into the nylon.
The slot to be filled with black paint.
Bases to fit into a nest located in front of the robot.
The 5 x Glue bead templates to have different patterns

Application 2 – Material Composition and packing application

- 15 x Bases of size 60mm x 60mm x 20mm (10 off Aluminium and 5 off white nylon)
Two trays with cutouts for the blocks to be supplied. Blocks to be arranged in a 3 x 5 format.
Trays to be removable from the deck.
Tray to have 2 x handles located on either side of the tray. The tray is to fit into a nest located on the deck.
The nests are to be located either side of the cobot.
Two proximity sensors to be mounted to the deck.
1 x Inductive (4mm sensing)
1 x Capacitive (4mm sensing)



The cobot will present the block to the sensors. The cobot will then pack the blocks on the packing tray according to the material composition.

Application 3 - Drawing and Writing

- It will include a whiteboard, a pen and a penholder from which the robotic arm will pick and store the pen without human interaction. The user will be able to perform activities related to writing and drawing with the robotic arm

Additional Requirements

- Station to be supplied with all Mechanical Drawings (both General Arrangement 3D, General Arrangement with exploded 3D views and detailed drawings of all mechanical parts)
- Station to be supplied with all Electrical Drawings. All wiring to be numbered and colour coded according to international accepted standards.
- Station to be supplied assembled.
- Station must be able to be disassembled and stored in a cabinet or cabinets (to be supplied).
- All pneumatic cylinders to be fitted with flow control valves. All cylinders to be fitted with sensors for detection of forward and reverse stroke.
- Station to be supplied with master program for control of the station. Program to be well commented explaining the action of each line of code.
- All sensors to be of the plugin M8 or M12 type.
- Station to be supplied with an operator's manual in English. Manual to include a FMEA of the equipment, maintenance schedule, and a list of all parts on the station. The list to include the suppliers name, part number and cost.

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Annexure A: Mandatory Requirements

Description of Appendix	Requirement	Circle yes if submitted	
		Yes	No
RFQ Document	Submission of a detailed and signed quotation	Yes	No
Technical specifications and pricing	Pricing according to the technical specification	Yes	No
Proof of Bank Account	Signed letter from the Bank (not older than 3 Months)	Yes	No
Company registration documents	Supply Company registration documents	Yes	No
Tax PIN	PIN Status certificate	Yes	No
BBBEE certification	A valid BBBEE certificate / An original Sworn-In Affidavit	Yes	No
Declaration of Interest	SBD 4 SBD 6.1 SBD 6.2 SBD 8 SBD 9	Yes	No
CSD	Supply proof of registration with the National Treasury	Yes	No
ID Copy of Company's director(s)	Supply with certified copy of IDs	Yes	No
Complete and sign the official document	Request for proposal form to be completed, signed and email back	Yes	No
Eligible Companies	OEM's or authorised resellers or distributors. Must provide sign letter that you are an authorised reseller/distributor of the product in South Africa	Yes	No

Annexure B: Functional criteria

Articulated Robot Station

Functional/Technical criteria	Weighting	0	5	7	10
<p>Main Specifications</p> <ul style="list-style-type: none"> • Reach 580mm • Payload 4kg • Armload 0.5kg • Number of axes 6 • Protection IP40 • Mounting Any angle • Controller Yes with Profinet • Integrated signals 8 Inputs and 8 Outputs on wrist • Integrated air supply 2 on wrist • Integrated ethernet One 1000 Base T ethernet port <p>Performance</p> <ul style="list-style-type: none"> • PR 0.01mm • PS time 0.19 Seconds • Path repeatability 0.05mm <p>Robot Tooling</p> <ul style="list-style-type: none"> • Gripper 1: Electrical 2 point with 10mm Travel controlled via Profinet. • Gripper 2 : Vacuum gripper with vacuum generator and control valve. <ul style="list-style-type: none"> • All associated equipment required for the operation of the system i.e. Cables, Teach Pendant etc. <p>Control Systems</p> <ul style="list-style-type: none"> • Supply Voltage 220Volt Single phase • Pneumatic supply 5 Bar • PLC with the following base specifications: <ul style="list-style-type: none"> o Like " Siemens "S 7-1511-1PN o 7" HMI KTP700 with Profinet port • PLC to have 20% spare I/O • 8 port switch 10/100. • E-Stop with safety relay. • 16 Fault simulator switches (lockable). 	40%	Meeting no machine specifications	Meets only <50% of the machine specifications	Meets > 50% of the machine specifications, but not all	Meets all of the machine specifications

- 24V 120W Power Supply (control voltage).
- Wiring to the control panel to be terminated into terminal blocks and not wired directly into the PLC.
- Operator panel to include the following functions: Inch Button, Start Button, Auto/Manual Selector switch, Home Button, Control Power on/off button and Emergency switch (rotate to release) button.

[Handwritten signature]

Safety Systems Specifications	20%	Meeting no Safety specifications	NA	NA	Meets all of the safety specifications
<p>Frame</p> <ul style="list-style-type: none"> • Dimensions (lxbxh): 1500 x 1400x 900mm • Robot to be mounted on an extruded aluminum frame with 4 x lockable casters. • Extruded aluminum safety enclosure (3 sides) mounted on top of the aluminum frame and CAT 4 light curtains mounted on the front of the safety enclosure. • Tower Light (Red/Green/Orange/Blue/Buzzer) IO link type. • Pneumatic filter regulator with a manually operated isolating valve (lockable in the exhaust position) fitted with both an analog gauge (0 to 10 bar) and a Digital Pressure Gauge (0 to 10 Bar with a 0 to 10V analog output), a soft startup valve. • Robot to be enclosed on three sides. <p>Control Panel</p> <ul style="list-style-type: none"> • Control panel to be housed in the frame. Control panel colour RAL7035. • Panel doors to be constructed from polycarbonate. • Panel to be fitted with an easily accessible mains isolator. 	20%	Meeting no Safety specifications	NA	NA	Meets all of the safety specifications
<p>Educational Material</p> <p>The system is to be supplied with 3 x Robotic training applications.</p> <ul style="list-style-type: none"> • Application 1 – Glue Bead path Templates training aids <ul style="list-style-type: none"> ○ 5 x Glue bead templates Size 300mm x 300mm x 20mm White nylon. ○ Glue bead template to have a 1mm wide x 1mm deep slot machined into the nylon. ○ The slot to be filled with black paint. ○ Bases to fit into a nest located in front of the robot. ○ The 5 x Glue bead templates to have different patterns • Application 2 – Material Composition and packing application <ul style="list-style-type: none"> ○ 15 x Bases of size 60mm x 60mm x 20mm (10 off Aluminium and 5 off white nylon) ○ Two trays with cutouts for the blocks to be supplied. ○ Blocks to be arranged in a 3 x 5 format. ○ Trays to be removable from the deck. ○ Tray to have 2 x handles located on either side of the tray. The tray is to fit into a nest located on the deck. ○ The nests are to be located either side of the Robot 	20%	No educational material are provided	NA	NA	All educational and materials are provided

[Handwritten signature]



- Two proximity sensors to be mounted to the deck.
 - 1 x Inductive (4mm sensing)
 - 1 x Capacitive (4mm sensing)
- The robot will present the block to the sensors. The robot will then pack the blocks on the packing tray according to the material composition.
- Application 3 - Drawing and Writing
 - It will include a whiteboard, a pen and a penholder from which the robotic arm will pick and store the pen without human interaction. The user will be able to perform activities related to writing and drawing with the robotic arm

[Handwritten signature]

Additional Requirements	15%	None of the Additional Requirements are met	Meets only <50% of the additional requirements	Meets > 50% of the additional requirements	Meets all of the additional requirements
<ul style="list-style-type: none"> Station to be supplied with all Mechanical Drawings (both General Arrangement 3D, General Arrangement with exploded 3D views and detailed drawings of all mechanical parts) Station to be supplied with all Electrical Drawings. All wiring to be numbered and colour coded according to International accepted standards. Station to be supplied assembled and including software applicable to the supplied robot. All sensors to be of the plugin M8 or M12 type. Station to be supplied with an operator's manual in English. Manual to include a FMEA of the equipment, maintenance schedule, and a list of all parts on the station. The list to include the suppliers name, part number and cost. <p>Local service and support capability</p>	15%	None of the Additional Requirements are met	Meets only <50% of the additional requirements	Meets > 50% of the additional requirements	Meets all of the additional requirements
<p>Local service and support capability</p>	5%	Sales only	Limited local technical support. Experts needs to be flown in from overseas for complex problems	NA	On-site service support. Full capable local team with a track record

[Handwritten signature]

Robot Station

Functional/Technical criteria	Weighting	0	5	7	10
<p>Main Specifications</p> <ul style="list-style-type: none"> • Payload 3-4kg • Reach 500mm • Degrees of freedom 6 Rotating joints • Programming Touchscreen with PolyScope graphical user interface • Operating temperature range 0 - 50°C • Compliance EN ISO 13849-1 and EN ISO 10218-1 • Typical TCP Speed 1m/s • Repeatability +/- 0.03mm <p>Control box</p> <ul style="list-style-type: none"> • Digital inputs 16 • Digital Outputs 16 • Analog inputs 2 • Analog outputs 2 • Quadrature Digital Inputs 4 • Communication Profinet • Power Source 100 – 240Vac 50 Hz <p>Robot Tooling - Gripper</p> <ul style="list-style-type: none"> • Electrical 2 point with 10mm Travel controlled via Profinet. • All associated equipment required for the operation of the system i.e. Cables, Teach Pendant and etc. <p>Control Systems</p> <ul style="list-style-type: none"> • Supply Voltage 220Volt Single phase. • Pneumatic supply 5 Bar. • PLC with the following base specifications: <ul style="list-style-type: none"> ◦ Working memory 100Kb, CPU processing time 0.085uS/instruction, Supply voltage 24Vdc, Retentive data area 10Kb, with RTC and Profinet Interface. ◦ 7" HMI with Profinet port. PLC to have 20% spare I/O. • 8 port switch 10/100 	40%	Meeting no machine specifications	Meets only <50% of the machine specifications	Meets > 50% of the machine specifications, but not all	Meets all of the machine specifications



- E-Stop with safety relay.
- 16 Fault simulator switches (lockable).
- 24V 120W Power Supply (control voltage).
- Wiring to the control panel to be terminated into terminal blocks and not wired directly into the PLC.
- Operator panel to include the following functions: Inch Button, Start Button, Auto/Manual Selector switch, Home Button, Control Power on/off button and Emergency switch (rotate to release) button.

[Handwritten signature]

Safety Systems Specifications	20%	Meeting no Safety specifications	NA	NA	Meets all of the safety specifications
<p>Frame</p> <ul style="list-style-type: none"> Dimensions (lxbxh): 1500 x 1400x 900mm Extruded aluminium frame fitted with 4 x casters of which 2 must be braked casters. Tower Light (Red/Green/Orange/Blue/Buzzer) IO link type. Pneumatic filter regulator with a manually operated isolating valve (lockable in the exhaust position) fitted with both an analog gauge (0 to 10 bar) and a Digital Pressure Gauge (0 to 10 Bar with a 0 to 10V analog output), a soft startup valve. Robot to be enclosed on three sides <p>Control Panel</p> <ul style="list-style-type: none"> Control panel to be housed in the frame. Control panel colour RAL7035. Panel doors to be constructed from polycarbonate. Panel to be fitted with an easily accessible Mains Isolator. <p>Educational Material</p> <p>The system is to be supplied with 3 x Robotic training applications.</p> <p>Application 1 – Glue Bead path Templates training aids</p> <ul style="list-style-type: none"> 5 x Glue bead templates Size 300mm x 300mm x 20mm White nylon. Glue bead template to have a 1mm wide x 1mm deep slot machined into the nylon. The slot to be filled with black paint. Bases to fit into a nest located in front of the robot. The 5 x Glue bead templates to have different patterns <p>Application 2 – Material Composition and packing application</p> <ul style="list-style-type: none"> 15 x Bases of size 60mm x 60mm x 20mm (10 off Aluminium and 5 off white nylon) Two trays with cutouts for the blocks to be supplied. Blocks to be arranged in a 3 x 5 format. Trays to be removable from the deck. Tray to have 2 x handles located on either side of the tray. The tray is to fit into a nest located on the deck. 	20%	Meeting no Safety specifications	NA	NA	Meets all of the safety specifications
<p>Educational Material</p> <p>The system is to be supplied with 3 x Robotic training applications.</p> <p>Application 1 – Glue Bead path Templates training aids</p> <ul style="list-style-type: none"> 5 x Glue bead templates Size 300mm x 300mm x 20mm White nylon. Glue bead template to have a 1mm wide x 1mm deep slot machined into the nylon. The slot to be filled with black paint. Bases to fit into a nest located in front of the robot. The 5 x Glue bead templates to have different patterns <p>Application 2 – Material Composition and packing application</p> <ul style="list-style-type: none"> 15 x Bases of size 60mm x 60mm x 20mm (10 off Aluminium and 5 off white nylon) Two trays with cutouts for the blocks to be supplied. Blocks to be arranged in a 3 x 5 format. Trays to be removable from the deck. Tray to have 2 x handles located on either side of the tray. The tray is to fit into a nest located on the deck. 	20%	No educational material are provided	NA	NA	All educational and materials are provided

- The nests are to be located either side of the cobot.
- Two proximity sensors to be mounted to the deck.
 - 1 x Inductive (4mm sensing)
 - 1 x Capacitive (4mm sensing)
- The cobot will present the block to the sensors. The cobot will then pack the blocks on the packing tray according to the material composition.

Application 3 - Drawing and Writing

- It will include a whiteboard, a pen and a penholder from which the robotic arm will pick and store the pen without human interaction. The user will be able to perform activities related to writing and drawing with the robotic arm



Additional Requirements	15%	None of the Additional Requirements are met	Meets only <50% of the additional requirements	Meets > 50% of the additional requirements	Meets all of the additional requirements
<ul style="list-style-type: none"> Station to be supplied with all Mechanical Drawings (both General Arrangement 3D, General Arrangement with exploded 3D views and detailed drawings of all mechanical parts) Station to be supplied with all Electrical Drawings. All wiring to be numbered and colour coded according to international accepted standards. Station to be supplied assembled. Station must be able to be disassembled and stored in a cabinet or cabinets (to be supplied). All pneumatic cylinders to be fitted with flow control valves. All cylinders to be fitted with sensors for detection of forward and reverse stroke. Station to be supplied with master program for control of the station. Program to be well commented explaining the action of each line of code. All sensors to be of the plugin M8 or M12 type. Station to be supplied with an operator's manual in English. Manual to include a FMEA of the equipment, maintenance schedule, and a list of all parts on the station. The list to include the suppliers name, part number and cost. 	15%	None of the Additional Requirements are met	Meets only <50% of the additional requirements	Meets > 50% of the additional requirements	Meets all of the additional requirements
Local service and support capability	5%	Sales only	Limited local technical support. Experts needs to be flown in from overseas for complex problems	NA	On-site service support. Full capable local team with a track record