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**SVSU**

**SHRI VISHWAKARMA SKILL UNIVERSITY**  
(Enacted Under Government of Haryana, Act No. 25 of 2016)

**Date: 30<sup>th</sup> October 2019, Corrigendum No 2 to: Standard expression of interest (EOI) – Supply and Installation of Welding Simulator**

With reference to the captioned subject matter, SVSU has issued Corrigendum to the EOI document, details are as under: -

**Corrigendum No.2**

<b>S. No.</b>	<b>Clause/Section/Reference/ Page/Paragraph</b>	<b>Existing clause</b>	<b>Corrigendum (Clause to be read as)</b>
1.	Section 2 - Instructions to Tenderers	2.1. Subject: Invitation for Supply & Installation of Welding Station Shri Vishwakarma Skill University, invites offline Bids	Shri Vishwakarma Skill University, invites online Bids
2.	Section 2 - Terms and conditions	3.1. Due Date The tender has to be submitted off-line on or before the due date.	The tender has to be submitted online on or before the due date.
3.	Annexure – XII Bid Submission	Offline Bid Submission: The Offline bids (complete in all respect)	Online Bid Submission: The online bids (complete in all respect)

4.	Section 3 - Terms and Conditions	3.15 Rate contract with DGS&D or DS&D (Haryana):	Rate contract with DGS&D or DS&D (Haryana): If the supplier or their Principals are on rate contract with DGS&D or DS&D (Haryana), this shall be mentioned specifically in the offer and a photocopy of the same, duly attested, may be appended.	Rate contract with GEM or DS&D (Haryana): If the supplier or their Principals are on rate contract with GEM or DS&D (Haryana), this shall be mentioned specifically in the offer and a photocopy of the same, duly attested, may be appended.
5.	Section 3 - Terms and Conditions	3.12 Delivery and Documents	Delivery of the goods should be made within a maximum of 04 to 06 weeks from the date of placement of purchase order at Shri Vishwakarma Skill University, Transit Office: Plot No. 147, Sector 44, Gurugram or at that place to be informed by the SVSU.	Delivery of the goods should be made within a maximum of 08 to 10 weeks from the date of placement of purchase order at Shri Vishwakarma Skill University, Transit Office: Plot No. 147, Sector 44, Gurugram or at that place to be informed by the SVSU.
6.	Annexure – XI Price Bid	Point 3 - Delivery Period	Delivery Period: 04 to 06 weeks from the date of placement of purchase order.	Delivery Period: 08 to 10 weeks from the date of placement of purchase order.
7.	Section 3 - Terms and Conditions	3.13 Liquidated Damages (L.D)/Penalty for Non-execution of Order	If a supplier fails to execute the order in time as per the terms and conditions stipulated therein, it will be open to the purchaser to recover liquidated damages for delay in delivery and installation from the supplier at the rate 1% (one percent) of the total cost of the material/contract per day or such other amount as the Registrar, SVSU, Gurugram may decide till the supply/work remains incomplete, provide that the total amount of the compensation shall not exceed 10% (ten percent) of the total cost of the material/contract.	If a supplier fails to execute the order in time as per the terms and conditions stipulated therein, it will be open to the purchaser to recover liquidated damages for delay in delivery and installation from the supplier at the rate 1% (one percent) of the total cost of the material/contract per week or such other amount as the Registrar, SVSU, Gurugram may decide till the supply/work remains incomplete, provide that the total amount of the compensation shall not exceed 10% (ten percent) of the total cost of the material/contract.
8.	ANNEXURE – II, Section 4 - Technical	Details of requirements and technical		Supplier can quote price for both AR and VR technologies for welding simulator separately.

	Specification and Compliance Sheet	specifications of machine		Please find below the updated Requirements and Technical specification and Compliance Sheet of Welding simulator (Annexure – II)
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## &lt;&lt; Organization Letter Head &gt;&gt;

### 3. Technical Specification and Compliance Sheet Specification and Requirements of Welding Simulator: -

**Requirement with specifications:** Virtual simulation device for welding trade to train students on SMAW, GMAW, FCAW and GTAW welding virtually without producing any real arc and real fumes new innovative tool for welding education (including of all necessary if required software cd & accessories).

**Tender Criterion (Welding Simulator):** The Purpose of buying the welding simulator is for proper education of students & make them employable in Industry. Hence the equipment availability & reliability should be in high order with latest version. In order to ensure flaw less service back up and 100% Equipment availability without any down time is necessary.

1. The offered Model of OEM must be working in Indian Conditions, without any Problems. Minimum 2 performance reports to be submitted.
2. Company should have Experience in installation, Service and Training of such welding simulators in Indian Environment. Detailed list to be submitted.
3. OEM should have service bench in the nearest possible locations to the University; and the OEM should also have spares etc. stored in India (nearest possible location).
4. The simulation must be 100% virtual meaning thereby, no consumables (wire, gas, metal plates) should be required.
5. The tenderer should be able to provide support for hardware (Spare and consumable) components and for the software for a minimum period of 10 years from the date of commissioning.
6. The tenderer should provide free updates for the software installed time to time.
7. The welding Simulation systems should be complete in all respect including spares for 3 years and accessories including but not limitation to following.
8. The tenderer should provide Relevant manuals, literature and standard Programme tutorials.

<b>SCOPE OF SUPPLY AT SITE</b>	
Welding Simulator set including display and CPU	2 Nos.
GMAW, SMAW, FCAW and GTAW Torch SET	2 Nos. each
Software DVD or CD	2 Nos. with free updates
Butt weld, Fillet weld, Lap weld, Pipe to Plate weld and Pipe to Pipe weld Haptic plates	2 Nos.
Reality head gear	2 Nos.
Work Positioner Stand	2 Nos.

**Technical Specifications:** Welding Simulator for SMAW/GTAW/GMAW

**PURPOSE:** Virtual Simulation Device for Welding Trade; A Device must be able to train student SMAW, GMAW, FCAW and GTAW welding virtually and must not produce any real arc and real fume.

**Details of requirements and technical specifications of machine**

<b>Name of the Machine: Welding Simulator (VIRTUAL REALITY)</b>		
<b>Specification</b>		<b>Compliance (Y/N)</b>
<b>WELDING PARAMETERS IN THE SIMULATOR</b>		
VISION TECHNOLOGY	<b>VIRTUAL REALITY</b>	
INPUT SUPPLY	SINGLE PHASE 110 – 230V, 50 – 60 HZ, 0.5 – 11A	
LEARNING CONCEPTS	BUTT, FILLET, PIPE TO PIPE AND PIPE TO PLATE	
WELDING POSITION - BASIC	1G TO 4G (UP TO OVERHEAD), 5G FOR PIPE	
SKILLS LEARNED	STICK OUT, SPEED, TORCH ANGLE	
TYPE OF WORK PIECES	HAPTIC WORK PIECES (NON-METALLIC)	
WORK STAND	FACILITY TO FIX THE JOB IN ALL POSITIONS	
ANALYSIS MODES REPORTS	VIDEO PLAYBACK WITH OPTION OF VIEWING FROM DIFFERENT ANGLES	
EVALUATION METHODOLOGY	OBJECTIVE (SCORE) / GRAPHICAL (TRENDS) EVALUATION	
VIEWING POINTS	ON HELMET, SIMULATOR SCREEN	
SYSTEM CONSTRUCTION	WELDING SIMULATOR SYSTEM SHOULD BE SUPPLIED AS A SINGLE UNIT WITH INTEGRATED DISPLAY SCREEN. (EASY INSTALLATION AND MOBILITY IS A MUST). NO EXTERNAL STEEL PARTS PERMITTED FOR SAFETY REASONS.	
INPUT METHOD AND GRAPHIC USER INTERFACE	TOUCH SCREEN AND EASY TO UNDERSTAND AND USE GUI	
MENU LANGUAGE	HINDI AND ENGLISH MANDATORY	
DISPLAY SCREEN	20 INCH AND ABOVE WITH TOUCH SCREEN FACILITY	
PROTECTION AGAINST	OVER CURRENT, UNDER VOLTAGE , OVER VOLTAGE , SHORT CURRENT	
TRACKING SYSTEM	MAGNETIC FOR PRECISE WELD TRACKING	

SIMULATION	100% VIRTUAL	
EVALUATION	EVERY WELD BEAD TO BE EVALUATED BY THE SIMULATOR	
GUIDANCE FOR IDEAL VISION DURING WELDING	CONTINUOUS	
MAINTENANCE AND UPDATE	ONLINE	
NETWORKING OF SIMULATORS	POSSIBLE	
SIMULATOR COMPLIANCE	CE AND FCC REGULATION	
CERTIFICATION	ISO FOR QUALITY AND ENVIRONMENT MANAGEMENT	
SOFTWARE TO BE SUPPLIED	WITH LIFETIME LICENSE INCLUDING MAIN OS SUCH AS WINDOWS AND UPGRADEABLE	
ABILITY TO RACK COMPLETE HISTORY	BY PERSONAL LOGIN ID	
LEARNING METHOD	DIDACTIC AND TRAINER GUIDANCE	
ADMINISTRATIVE AND TRAINER LOGIN	MUST BE AVAILABLE TO MONITOR AND EVALUATE STUDENTS ACTIVITY DATA BACKUP AND CALIBRATION FACILITY	
RFID BASED CARD ACCESS SYSTEM	INBUILT FOR ENHANCE DATA SECURITY AND ADMINISTRATION OF MACHINE	
MACHINE ALERTS	WRONG PARAMETER SELECTION, TOUCHING WORK PIECE DURING DIDACTIC LEARNING	
EVOLUTION RESULTS	MARKS OR GRAPHS OR BOTH. SOFTWARE MUST SUGGEST PASS/FAIL AFTER COMPLETION OF EACH COURSE	
MACHINE DISPLAY	MUST BE ABLE TO PLAY E-LEARNING VIDEOS/VARIOUS AUDIO VISUALS RELATED TO WELDING AND SAFETY	
MACHINE UP GRADATION (HARDWARE AND SOFTWARE)	ROBOTIC ARM SIMULATION FACILITY FOR GMAW WELDING ,3D VIEW FORM THE HELMET	
GMAW AND GTAW PROCESS	2-STEP AND 4-STEP	
RECORDING /PLAYBACK	EACH WELDING SEAM MUST BE RECORDED AND PLAYED WITH GHOST FOR EVALUATION PROPOSE	
WARRANTY/GUARANTEE	3 YEARS	
TRAINING	ONSITE TRAINING OF END USER DESTINATION	

AFTER SALES SERVICE	THROUGH OEM OR DEALER ACROSS INDIA	
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<b>Name of the Machine: Welding Simulator (AUGMENTED REALITY)</b>		
<b>Specification</b>		<b>Compliance (Y/N)</b>
<b>WELDING PARAMETERS IN THE SIMULATOR</b>		
INPUT SUPPLY	SINGLE PHASE 230V	
CURRENT RANGE - SMAW	50A - 240A (2.5, 3.15 & 4MM ELECTRODE)	
VOLTAGE & CURRENT RANGE - GMAW	10V - 32V & 25A - 270A (0.8, 1.0, & 1.2 DIA WIRE)	
CURRENT RANGE - GTAW	25A - 270A (2.0 & 2.4MM ROD)	
WEIGHT OF THE SIMULATOR UNIT	LESS THAN 20 KGS. STURDY & METAL BODY DESIGN	
<b>WELDING PRACTICES IN THE SIMULATOR</b>		
PROCESS SIMULATED	SMAW, GMAW, FCAW AND GTAW	
PHYSICAL WORKPIECES	BUTT, FILLET, LAP, PIPE TO PIPE AND PIPE TO PLATE JOINTS	
WELDING POSITION	1F TO 6F POSITIONS IN FILLET AND 1G TO 6G POSITIONS IN GROOVE	
WORKPIECE POSITION	FLEXIBILITY TO POSITION THE WORKPIECE AT ANY PLACE (NOT FIXED IN A LOCATOR)	
THICKNESS OF BASE MATERIAL	3MM, 6MM & 10MM	
TORCH CONTROL - GMAW & GTAW	TWO STEP AND FOUR STEP CONTROLS	
TORCHES - GMAW & GTAW	EURO CONNECTOR - INDUSTRIAL TORCHES (ANY REPUTED MAKE LIKE TBI, BINZEL, ETC.)	
GTAW – FOOT PEDAL	GTAW FOOT PEDAL CURRENT CONTROL FOR EASY OPERATION	
<b>WELDING SIMULATION IN THE SIMULATOR</b>		
TECHNOLOGY	AUGMENTED REALITY	
SIMULATION METHODOLOGY	GREEN LEARNING WITH NO REAL ARC OR REAL FUMES.	
WELD BEAD SIMULATION	CONTINUOUS ARC WITH WELD BEAD FORMATION	
VIRTUAL & ACTUAL	THE OBJECTS MUST BE ACTUAL HARDWARE AND THE SIMULATION IMAGES MUST BE VIRTUAL OBJECTS VISIBLE INSIDE THE SPECIAL REALITY MASK	
HARDWARE OBJECTS	HARDWARE OBJECTS ARE SMAW HOLDER, ELECTRODE, GMAW TORCH, GTAW TORCH AND TIG FILLER	

SOFTWARE	3D WELDING SIMULATOR SOFTWARE ACCREDITED BY ANY INTERNATIONAL WELDING SOCIETY	
WELDING PRACTICE	PRACTICE ON PHYSICAL WORKPIECE - MINIMUM 10 INCH LONG WELD BEAD	
SMAW WELDING PRACTICE	DURING SMAW WELDING PRACTICE, PHYSICAL ELECTRODE (HARDWARE) TO BE USED AND THE SAME MUST RETRACT SIMULATING THE CONSUMPTION OF ELECTRODE	
GMAW METAL TRANSFER	GMAW WELDING TO ACCOMMODATE SHORT AND LONG STICK OUT LIKE REAL WELDING. FIXED / LIMITED STICK OUT NOT ACCEPTED	
GTAW WELDING PRACTICE	GTAW WELDING (TORCH & FILLER). THE FILLER ROD (HARDWARE) WITH SKILL GUIDANCE FOR WORK AND TRAVEL ANGLE.	
<b>WELDING SIMULATOR</b>		
GUIDANCE FOR PARAMETERS	GREEN / RED SIGNAL INSIDE HELMET - CURRENT, VOLTAGE, ETC... THE STUDENT MUST ALWAYS BE ABLE TO SEE IF THE PARAMETERS ARE CORRECT OR WRONG EVEN AFTER HE STARTS WELDING. THE SIMULATOR MUST HAVE INDICATORS TO GUIDE THE STUDENT. RED INDICATION HELP HIM TO ALTER THE PARAMETERS EVEN AFTER HE HAS STARTED WELDING.	
GUIDANCE FOR HEAD POSITION	GREEN / RED SIGNAL INSIDE HELMET - HEAD TO WORKPIECE, UP/DOWN, ETC... SIMULATOR MUST GUIDE THE STUDENT ON THE CORRECT HEAD POSITION THROUGH RED ARROWS INDICATORS ALL THROUGH OUT THE WELDING PRACTICE.	
GUIDANCE FOR SKILLS	SIMULATOR TO GUIDE THE STUDENT ON ALL THE SKILL SETS LIKE: STICK OUT, PATH, ARC LENGTH, WELDING SPEED, WORK ANGLE AND TRVEL ANGLE. IN GTAW, IT MUST GUIDE ON THE WORK AND TRAVEL ANGLE OF THE FILLER ROD.	
WELDER VIEW	WELDER WILL BE ABLE TO SEE THE REAL WORKPIECE FROM INSIDE THE HELMET. AT ANY POINT DURING THE WELDING, HE MUST BE ABLE TO TOUCH / ROTATE / ADJUST THE WORKPIECE TO GAIN COMFORT.	
REALITY HELMET	HD SCREEN HELMET - GOGGLE LESS VISION FOR USER COMFORT. STUDENTS /	



	TRAINERS USING SPECTACLES MUST BE ABLE TO USE IT CONVENIENTLY.	
<b>WELDING ASSESSMENT IN THE SIMULATOR</b>		
SKILLS ANALYSIS FOR TORCH	GUIDANCE / ANALYSIS FOR ARC LENGTH, STICK OUT, SPEED, WORK ANGLE & TRAVEL ANGLE & PATH	
SKILLS ANALYSIS FOR GTAW FILLER	GUIDANCE / ANALYSIS FOR WORK ANGLE AND TRAVEL ANGLE	
DEFECTS ANALYSIS	POROSITY, SPATTER, BURN THROUGH & INCLUSIONS	
DISPLAY SCREEN	32 INCHES OR ABOVE LED SCREEN	
ON SCREEN EVALUATION	VIDEO, GRAPH AND PERCENTAGE.	
VISUAL EVALUATION	HOLD THE WORKPIECE IN HAND AND INSPECT. LIFT, ROTATE, TURN AND SEE THE WELDING FROM ALL POSSIBLE ANGLES.	
DUAL ACCESS	ONLINE ACCESS FOR STUDENT PRACTICE AND OFFLINE ACCESS FOR TRAINER TO EVALUATE THE PREVIOUS PERFORMANCE MUST HAPPEN PARALLELLY	
<b>ACCESS FROM EXTERNAL PC</b>		
FOLLOWING ACTIVITIES TO BE CARRIED OUT FROM AN EXTERNAL PC.	ADD, EDIT & DELETE STUDENT NAMES ADD, EDIT & DELETE COURSES ADD, EDIT & DELETE MODULES UPLOAD OF PDF DOCUMENTS CREATING OWN WPS EVALUATION OF STUDENT PERFORMANCE SUPPLIER TO PROVIDE COMPATIBLE SOFTWARE FOR OFFLINE ACCESS TO THE TRAINER TO CARRY OUT THE ABOVE ACTIVITIES THROUGH EXTERNAL PC	
<b>KEY FEATURES FOR SAFETY, QUALITY, VALIDATION AND AUTHENTICITY</b>		
SAFETY REGULATIONS	COMPLY WITH CE AND FCC REGULATIONS. COPY TO BE SUBMITTED.	
OEM CERTIFICATE	TENDER SPECIFIC AUTHORISATION LETTER TO BE SUBMITTED FROM ORIGINAL OEM OF THE SIMULATOR OFFERED	
STURDY DESIGN	SIMULATOR TO BE MADE OF STEEL STRUCTURE AND NOT FROM NON METAL (WOOD, PLASTIC, etc.)	
ACCREDITATION	CERTIFICATE FROM ANY RECOGNISED WELDING BODY (IIW, AWS, DVS, IWS, ETC...) TO BE SUBMITTED.	

<b>Welding simulator</b> – Virtual simulation device for welding trade to train students on SMAW, GMAW, FCAW and GTAW welding virtually without producing any real arc and real fumes new innovative tool for welding education				
<b>Scope of Supply for simulator and spares mentioned below:</b>				
<b>Sr. No</b>	<b>Description of Item</b>	<b>Quantity per set</b>	<b>No of Sets</b>	<b>Compliance Y/N</b>
1.01	WELDING SIMULATOR	1 No	2 Sets	
1.02	REALITY HELMET (HEADGEAR)	1 No		
1.03	SMAW TORCH	1 No		
1.04	SMAW ELECTRODE	1 No		
1.05	GMAW TORCH WITH NOZZLE	1 No		
1.06	GTAW TORCH WITH NOZZLE	1 No		
1.07	GTAW FILLER	1 No		
1.08	LAP JOINT WORKPIECE	2 No		
1.09	BUTT JOINT WORKPIECE	2 No		
1.10	FILLET JOINT WORKPIECE	2 No		
1.11	PIPE BUTT (PIPE TO PIPE) WORKPIECE	2 No		
1.12	PIPE FILLET (PIPE TO PLATE) WORKPIECE	2 No		
1.13	WORK STAND FOR 6G	1 No		
1.14	32 INCH LED SCREEN	1 No		
1.15	SOFTWARE FOR OFFLINE ACCESS	1 No		
1.16	ROUTER WITH CABLES	1 No		

University reserved the right to enhance or mitigate the quantity without any notice.

**Note:** All the accessories (in all respect) which shall be required to run the machine has to be supplied along with the machine. All the accessories offered should be of same (instrument) OEM make only.

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

**Signature of Tenderer**

**Name:** .....

**Designation:** .....

**Organization Name:** .....

**Contact No.:** .....