



BATAAN PENINSULA STATE UNIVERSITY

City of Balanga 2100 Bataan
PHILIPPINES

PURCHASE ORDER

Supplier:	OMNIFAB, INC.	P.O. No.	PB2021-12-015	P.R No.	CO2021-11-0399
Address:	131 Mezzanine Flr., 7th Ave., Grace Park, Caloocan City	Date:	December 17, 2021		
		Mode of Procurement:	Public Bidding		
TIN:	008-995-306-000	PMO/ End-User:	BPSU CENTRAL OFFICE - DR3AM-RDO	Posted (per Fund) by:	CE-POST III Bamboo

Gentlemen

Please furnish this office the following articles subject to the terms and conditions contained herein

Place of Delivery:	Supply Office, BPSU-Central Office	Delivery Term:	60 Calendar Days (upon commencement date specified on NTP)		
Date of Delivery:		Payment Term:			
Stock/Property No.:	Unit	Description	Quantity	Unit Cost	
1	lot	Continuous Carbon Fiber 3D Printer Offer Brand: Markforged Mark Two		1,749,000.00	1,749,000.00
		<p>SPECIFICATIONS:</p> <p>Print Technology: Fused Filament Fabrication (FFF) with capability to incorporate continuous fiber as reinforcement</p> <p>Build Size: at least 300 (width) x 100 (depth) x 100 mm (height)</p> <p>Layer Height: 100 Micron or better</p> <p>Slicing Software: With Cloud control and Two-factor authentication</p> <p>Nozzle System: Dual Extruder, out of plastic detection</p> <p>Print System: 2 Nozzles - One for Base Material and One for Reinforcement Material</p> <p>Power Requirements: 100-240 VAC, 150 W (2 A peak)</p> <p>Printing Materials: Base Filaments - Nylon, and Nylon with Chopped Carbon Fiber (preferably, able to print other materials)</p> <p>Reinforcement Fiber - Carbon Fiber, Fiberglass, High Strength High Temperature Fiberglass, Kevlar</p> <p>Print Bed: Kinematic coupling — flat to within 160 micron</p> <p>The print bed must use kinematic coupling to provide precision and certainty of location, enabling pausing and removal of bed mid-print. Material Tensile Strength: 800 MPa (25.8x ABS, 2.6x 6061-T6 Aluminum)</p> <p>Material Tensile Modulus: 60 GPa (26.9x ABS, 0.87x 6061-T6 Aluminum)</p> <p>Infill: Closed cell infill: multiple geometries available</p> <p>The print bed has the ability to be decoupled and recoupled with 10 microns repeatability during the middle of a print</p> <p>A fiber cutting blade must be integrated inside the print head and controlled automatically by software.</p> <p>Printer must be able to embed fiber into prints, Fibre must be able to be placed in a wall with 2.8mm thickness. When the printer is laying down fiber, it must be able to turn the fiber direction and lay down continuously with maximum 180 degrees</p> <p>The printer must be able to print in any selectable resolution without changing the print head or nozzles. PACKAGE INCLUSION:</p> <p>1 Set 3D Printer Kit -USB Cable, Gluestick, Powercord, Spatula, 1 Unit Print Bed</p> <p>3 Spools Nylon with Chopped Carbon Fiber Filament (at least 750cc per spool)</p> <p>1 Spool 100cc Carbon Fiber Reinforcement</p> <p>1 Spool 50cc Fiberglass Reinforcement</p> <p>1 Spool 50cc Kevlar Reinforcement</p> <p>1 Spool 50cc High Strength High Temperature Fiberglass Reinforcement</p> <p>1 Seat Comprehensive Additive Manufacturing Training Program to become Certified Expert in Additive Manufacturing of Composites</p> <p>Slicing Software with Cloud control and Two-Factor Authentication</p> <p>3 UNITS. CFF Quick Change Nozzle, 3 UNITS. FFF Quick-change nozzle, 1 Unit Filament Drybox, English Manual</p>			
				Sub Total	1,749,000.00

In case of failure to make the full delivery within the time specified above, a penalty of one-tenth (1/10) of one percent for every day of delay shall be imposed on the undelivered item/s.

Very truly yours

Conforme

ANGELOUE OCAMP

(Signature over printed name)

Date 12/28/2021

GREGORIO J. RODIS, PH. D.
University President
(Authorized Official)

Fund Cluster: CF-POST III Bamboo

Funds Available: 2874500

EIZEL JANE PEREZ - DELA ROSA

Accountant IV

Chief Accountant/ Head of the Accounting Division/Unit

ORS/BURS No.:

Date of the ORS/BURS No.:

Amount :



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TIN:	008-995-306-000	PMO/ End-User:	BPSU CENTRAL OFFICE - DR3AM-RDO	Posted (per Fund) by:	6/12.14.21 CF-DOST III Bamboo

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Date of Delivery:		Payment Term:			
Stock/Property No.:	Unit	Description	Quantity	Unit Cost	
		<p>SOFTWARE: The information Security Management System must conform to the requirements of ISO/IEC 27001 The Information Security Management System (ISMS), is to appropriately preserve privacy, confidentiality, integrity, and availability (CIA) of the manufacturers information assets, including, but not limited to, its and its clients' intellectual property. The software used should leverage FIPS 140-2 compliant encryption standards. All data is in transit using TLS. HTTPS is required for all services, including vendors's public website and cloud applications. Additionally, part files are protected with data encryption at rest by encrypting the Amazon Web Services (AWS) Simple Storage Service (S3) buckets where part files are stored using AES-256. Vendors must implement controls to appropriately limit the creation, storage, usage, and deletion of encryption keys. All print files sent to printers are formatted as encrypted format. containing details about the part geometry, orientation, and fiber and material layout. This means that encrypted files transferred from software to printers by USB mass storage devices are secured via encryption. The slicing software provides users with the option to enable two-factor authentication (2FA) for additional security. The 2FA utilizes time-based one time passwords (TOTP) and can be configured using well known 2FA apps like Google Authenticator or Authy. User passwords are securely hashed, salted, and stored using AWS Cognito, which employs the SRP protocol. The software development lifecycle (SDLC) employs manual code reviews and automated integration testing before each deployment. Several pre-release environments are used for quality assurance and testing prior to releasing any code to production. Vendor utilizes a continuous deployment model, which allows customers to immediately benefit from new functionality, vulnerability remediation, and bug fixes.</p> <p>The 3D printing software must be able to import 3D models from any major CAD software in STL format The 3D Printing software must include slicing tools with integrity checking for 3D printing The 3D printing software must be able to monitor and control the printing parameters, including layer thickness, infill type and material choice The software must be able to calculate printing time and consumables usage during preprocessing of each print job. The software must be able to calculate the cost of each part during preprocessing of each print job. The software must be able to show the continuous fibre routing in 2d and 3d, so that it can be manipulated. Other Inclusions: Certificate of Distributorship: Attached Certificate of authority to sell issued by the manufacturer or Philippine Distributor/Reseller.Training Availability: Attached training certificate provided by manufacturer's certified trainer.Training and Installation: 2 days onsite training and installation for at least 2 personnel. Warranty: 12 Months warranty for parts and service After Sale Support: Attached After-Sales Support certificate issued by the manufacturer that the supplier has the capability to do after sales support after warranty.Attached certification of parts availability issued by the manufacturer for the project.Delivery Lead Time: Onsite delivery, installation, and commissioning at Project Location; Within 60 Days upon received of Notice to Proceed</p>			

In case of failure to make the full delivery within the time specified above, a penalty of one-tenth (1/10) of one percent for every day of delay shall be imposed on the undelivered item/s.

Conforme	Very truly yours	 GREGORIO J. RODIS, PH. D. University President (Authorized Official)
 ANGELIQUE (Signature over printed name) Date 12/28/2021		

Fund Cluster:	CF-DOST III Bamboo	ORS/BURS No.:	
Funds Available:	2,876,000	Date of the ORS/BURS No.:	
EIZEL JANE PEREZ - DELA ROSA Accountant IV Chief Accountant/ Head of the Accounting Division/Unit		Amount :	



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TIN:	008-995-306-000	PMO/ End-User:	BPSU CENTRAL OFFICE - DR3AM-RDO	Posted (per Fund) by:	9.12.14.21 CF-DOST III Bamboo

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Date of Delivery:		Payment Term:			
Stock/Property No.:	Unit	Description	Quantity	Unit Cost	
		Large Format 3D Printer Offer Brand: Modix, Big Meter SPECIFICATIONS: Technology: Fused Deposition Modeling (FDM) Build Size: at least 1000 x 1000 x 1000 mm Filaments Size: 1.75 mm, Open Source Extruder: Dual Print Head Layer Height: 50-800 Micron or better Nozzle Diameter Available: 0.4, 0.6 & 0.8 mm brass Volcano nozzles Enclosure: Fully Enclosed made of 3mm black Aluminum Composite Panels (ACP) 3D Printer Controller: 7-inch touchscreen – integrated with the controller Connectivity: WiFi web access for remote control from either mobile or UNIT allowing users to upload print files directly from their workstation SD cards UNIT and USB Motion System: Linear guide rails Position accuracy: X-10 Micron, Y-10 Micron, Z-0.5 Micron Print speed – Normal quality 60 mm/sec, Draft 100 mm/sec, Calculated for 0.4 nozzle. Print Bed; heated, Tempered Glass Max temperature: 120 degree Celcius, Calibration: Auto Bed Leveling Software: Open source Duet RepRap firmware. The leading firmware for 3D printing allowing numerous configurations and easy customization using the macro system. Filament Run-Out Sensor – The filament run-out detection sensor will pause the print job when the filament has been used up. Open Filament – Any filament from any vendor can be used. PACKAGE INCLUSION: 1 Set 3D Printer Kit -USB Cable, Gluestick, Powercord, Spatula 1 Unit Print Bed with tempered glass, 1 Set Full Enclosure Kit 1 set Caster Wheels, 1 Seat Simplified 3D - Slicing Software 3 Spool 1kg ABS Filament, 3 Spool 1kg PLA Filament English Manual Secondary printhead	1	987,400.00	987,400.00
		Other Inclusions: Certificate of Distributorship: Attached Certificate of authority to sell issued by the manufacturer or Philippine Distributor/Reseller. Training Availability: Attached training certificate provided by manufacturer's certified trainer. Training and Installation: 2 days onsite training and installation for at least 2 personnel. Warranty: 12 Months warranty for parts and service After Sale Support: Attached After-Sales Support certificate issued by the manufacturer that the supplier has the capability to do after sales support after warranty. Attached certification of parts availability issued by the manufacturer for the project. Delivery Lead Time: Onsite delivery, installation, and commissioning at Project Location; Within 60 Days upon received of Notice to Proceed			
				Sub Total	987,400.00

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Conforme	Very truly yours	 GREGORIO J. RODIS, PH. D. University President (Authorized Official)
 ANGELINA (Signature over printed name) Date 12/20/2021		

Fund Cluster:	CF-DOST III Bamboo	ORS/BURS No.:	
Funds Available:	2876,300.	Date of the ORS/BURS No.:	
 EIZEL JANE PEREZ - DELA ROSA Accountant IV Chief Accountant/ Head of the Accounting Division/Unit		Amount :	

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TIN:	008-995-306-000	PMO/ End-User:	BPSU CENTRAL OFFICE - DR3AM-RDO	Posted (per Fund) by:	 CE-DOST III Bamboo

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[illegible]

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Conforme

GREGORIO J. RODIS, PH. D.
University President
(Authorized Official)

ANGELIQUE OCAMPO
(Signature over printed name)
Date 12/28/2021

<p>Fund Cluster: _____</p> <p>Funds Available: _____</p> <p>EIZEL JANE PEREZ - DELA ROSA Accountant IV <i>Chief Accountant/ Head of the Accounting Division/Unit</i></p>	<p>CF-DOST III Bamboo</p> <p>ORS/BURS No.: _____</p> <p>Date of the ORS/BURS No.: _____</p> <p>Amount : _____</p>
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