Republic of the Philippines
CARAGA STATE UNIVERSITY
Ampayon, Butuan City 8600, Philippines
Competence Service Uprightness
BIDS AND AWARDS COMMITTEE (BAC)

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

ADDENDUM NO. 01
Series of 2021

This Addendum No. 01 is issued to modify or amend items in the Bidding Documents for the **Provision of ICT Equipment for the operation of CHED-IDEAS Lab**. This shall form an integral part of the Bid Documents.

Name of Project:	**Provision of ICT Equipment for the operation of CHED-IDEAS Lab**
Location:	CSU Campus, Ampayon, Butuan City
Brief Description:	Provision of ICT Equipment for the operation of CHED-IDEAS Lab
Approved Budget for the Contract :	**Php. 7,800,000.00**
Source of Funds:	TRF 2021
Contract Duration:	120 Calendar Days

Please be informed of the changes and the inclusion of design in the Bidding Documents, as follows:

CHANGES/ AMENDMENT					
SPECIFICATION					
FROM			**TO**		
Contract Duration: 45 Calendar Days			**Contract Duration: 120 Calendar Days**		
ITEM No.	**DESCRIPTION**	**QTY**	**UNIT**	**UNIT COST**	**TOTAL COST**
1	**DESKTOP COMPUTER** Processor: Core: 6, Threads: 12, Max. Freq. 3.6 Ghz, Smart Cache 12 MBHDD: 1TB Video Card:GDDR5, 2GB, Direct x 12 Open GL 4.5 Support, DVI,HDMI 2.0,Display Port 1.4 Memory: 8GB RAMDDR Casing with power supply Generic 20” monitor AVR, keyboard, mouse Windows 10 Professional Warranty: 1 year with technical support	10	set	**₱50,000.00**	**₱500,000.00**
2.	**LAPTOP COMPUTER** Processor: Core: 4, Threads: 8, Max. Freq. 4.5 Ghz,Smart Cache 8MB HDD: 1TB SSD: 512 GB Memory: 8GB DDR Video Card: 6GB GDDR6 192 bit, Core Speed: 960-1200 Mghz With Power adapter, bag, 32GB thumb drive USB 3.0,	5	unit	**₱60,000.00**	**₱300,000.00**

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	Warranty: 1 year, with technical support				
3.	**HIGH PERFORMANCE COMPUTER FOR COMPUTATIONAL CHEMISTRY WITH COMPUTING DEVICES AND ACCESSORIES** **High Performance Computing (HPC) Server, Branded** Processor : 2 x 3.3Ghz, 12C/24T, 10.4GT/s,24.75M Cache,Turbo, HT(165W) DDR4-2933 Memory : 4 x 32GB RDIMM 3200MT/s, Dual Rank DIMM slots : 24 DDR4 DIMM Slots, Supports RDIMM / LRDIMM Storage (Sys) : BOSS Controller Card + with 2 M.2 Sticks480GB(RAID 1), FH Storage (Data) : 4 x 2.4TB, SAS Drive 10K RPM 12Gbps 512e2.5"Hot-Plug Controller : PERC H750 Adapter, Low Profile Drive Bays : Up to 16 x 2.5" SAS/SATA (HDD/SSD) or 8 x 3.5"SAS/SATA HDD Network / LAN : 10GbE SFP+, rNDC Transceiver : 4 x SFP+ SR Optic 10GbE 850nm TransceiverModules Patch Cord : 2 x Fiber Patch Cord, LC–LC, 2m Accelerator : 3 x Full-height, full-length (FHFL) 10.5", dual-slot,Base:765 MHz, Memory clock 1215 MHz, Memory type HBM2,Memory size:40GB, 5120 bits, Up to 1555 GB/s, 250W, DW, FullHeight GPU Power Supply : Dual, Hot-plug, Redundant Power Supply, 2000WPower Cord : 2 x Jumper Cord-C19/C20, 0.6M, 250V, 16A Form Factor : 2U Rack Mount Accessories : Ready Rails Sliding Rails with Cable ManagementArm Management : iDRAC9, Enterprise Software : Open Manage Enterprise Advanced or better Support : Support and Onsite Service Initial-Emerging DBS, 36Months OS : Proprietary Operating system, Single Academic OLP 16 Licenses No Level Core License with 5 License No LevelDevice CAL Eng'g Services : Installation of OS and setup of the server. Warranty: 3 years with technical support UPS, Online Double Conversion, Single Phase, 10kVA EquipmentSpecifications: Input Dual Input : Yes Rated Voltage : 220 / 230 / 240 1-PhaseRated Frequency : 50/60Hz ± 5Voltage Tolerance : 230 ±20% Power factor : > 0.98Current distortion : ≤ 5%Bypass Voltage Tolerance : 180 / 264 VAC Frequency tolerance : ± 5% (selectable by user) Bypass Overload : 110% continuous, 130% for 1 hr., 150% for 3sec. Output Nominal Power : 10 kVAActive Power : 10 kW Rated Voltage : 2201 / 230 / 240 1-Phase (selectable)Rated Frequency : 50 or 60 Hz Waveform : Sinusoidal Output sockets : Terminal board + 2 IEC 320 C13 + 1 IEC 320 C19 **Batteries** Type : VRLA AGM Maintenance-Free Lead Based Battery Config : 12V SMF VRLA	1	Lot	**₱7,000,000.00**	**₱7,000,000.00**

	Batteries (Internal) **Engineering Services** Installation and configuration and commissioning of the UPS.Warranty: 3 year, with technical support **C. PC, All-in-One, Branded (10 Units)** Processor : 8 Cores/16MB/16Threads/2.5GHz to 4.9GHz/65W)Memory : 1 x 8GB DDR4 Non-ECC Memory Storage : 1TB, 2.5" SATA Drive 7200 RPM Graphics : Arch. Turing Shaders, Boost Clock 1665 MHz, MemorySpeed: 8 GBps, GDDR5 4GB Power Supply : Platinum Power Supply Unit Wireless : Wi-Fi 6, Dual-band 2x2 802.11ax with MU-MIMO Bluetooth :Bluetooth 5.1 Accessories : Wireless Keyboard & Mouse, Black and Basic StandBuilt-in SW : AI Optimization (Optimizer); and Support Assist OS Recovery Tool Display : 23.8" FHD 1920x1080 IPS Non-Touch Anti-Glare, DiscreteGraphics IR Camera : Yes Warranty : 3-Years ProSupport and NBD Onsite Service OS : 64x Based operating System, Latest Version, built in anti virusUPS : 650VA / 360W, USB, 230V Eng'g Services : Installation and setup of AIO PCs.with technical support **D. Academic Site Binary License for First Unix Machine Type** Single Unix Machine Type License. All supported x86_64-based/Linux computer systems covers all four ofthe following G16 x86-64/Linux binaries versions: Legacy (pre-SSE4.2-enabled) x86_64-based Linux binariesSSE4.2-enabled x86_64-based Linux binaries AVX-enabled x86_64-based Linux binaries AVX2-enabled x86_64-based Linux binaries Fundamental Algorithms • Calculation of one- & two-electron integrals over any contracted gaussian functions • Conventional, direct, semi-direct and in-core algorithms • Linearized computational cost via automated fast multipole methods (FMM) and sparse matrix techniques • Harris initial guess Initial guess generated from fragment guesses or fragment SCF solutions • Density fitting and Coulomb engine for pure DFT calculations, including automated generation of fitting basis sets $\mathcal{O}(N)$ exact exchange for HF and hybrid DFT • 1D, 2D, 3D periodic boundary conditions (PBC) energies& gradients (HF & DFT) • Shared-memory (SMP), cluster/network and **GPU-based** parallel execution Model Chemistries **Molecular Mechanics** • Amber, DREIDING and UFF energies, gradients, and				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	frequencies • Custom force fields • Standalone MM program **Ground State Semi-Empirical** • CNDO/2, INDO, MINDO3 and MNDO energies and gradients • AM1, PM3, PM3MM, PM6 and PDDG energies, gradients and reimplemented (analytic) frequencies • **PM7: original and modified for continuous potential energy surfaces** • Custom semi-empirical parameters (Gaussian and MOPAC External formats) • DFTB and DFTBA methods **Self Consistent Field (SCF)** • SCF restricted and unrestricted energies, gradients and frequencies, and RO energies and gradients • **EDIIS+CDIIS default algorithm; optional Quadratic Convergent SCF** • **SCF procedure enhancements for very large calculations** • Complete Active Space SCF (CASSCF) energies, gradients & frequencies • Active spaces of up to **16** orbitals • Restricted Active Space SCF (RASSCF) energies and gradients • Generalized Valence Bond-Perfect Pairing energies and gradients • Wavefunction stability analysis (HF & DFT) **Density Functional Theory** *Closed and open shell energies, gradients & frequencies, and RO energies & gradients are available for all DFT methods.* • EXCHANGE FUNCTIONALS: Slater, Xα, Becke 88, Perdew- Wang 91, Barone-modified PW91, Gill 96, PBE, OPTX,TPSS, **revised TPSS**, BRx, PKZB, ωPBEh/HSE, PBEh • CORRELATION FUNCTIONALS: VWN, VWN5, LYP, Perdew 81,Perdew 86, Perdew-Wang 91, PBE, B95, TPSS, **revised TPSS**, KCIS, BRC, PKZB, VP86, V5LYP • OTHER PURE FUNCTIONALS: VSXC, HCTH functional family, τHCTH, B97D, M06L, SOGGA11, M11L, MN12L,N12, **MN15L** • HYBRID METHODS: B3LYP, B3P86, P3PW91, B1 and variations, B98, B97-1, B97-2, PBE1PBE, HSEh1PBE and variations, O3LYP, TPSSh, τHCTHhyb, BMK, **AFD**, M05, M052X, M06, M06HF, M062X, **M08HX, PW6B95, PW6B95D3, M11, SOGGA11X, N12, MN12SX, N12SX, MN15**, HISSbPBE, X3LYP, BHandHLYP; user- configurable hybrid methods • DOUBLE HYBRID: B2PLYP & mPW2PLYP and variations with dispersion, **DSDPBEP86, PBE0DH, PBEQIDH** (see also below in "Electron Correlation") • EMPIRICAL DISPERSION: **PFD, GD2, GD3, GD3BJ** • FUNCTIONALS INCLUDING DISPERSION: **APFD, B97D3,B2PLYPD3** • LONG RANGE-CORRECTED: LC-ωPBE, CAM-B3LYP,				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	ωB97XDand variations, Hirao's general LC correction • **Larger numerical integrations grids** **Electron Correlation:** *All methods/job types are available for both closed and open shell systems and may use frozen core orbitals; restricted open shell calculations are available for MP2, MP3, MP4 and CCSD/CCSD(T) energies.* • MP2 energies, gradients, and frequencies • **Double hybrid DFT** energies, gradients and frequencies,with optional empirical dispersion (see list in "Density Functional Theory" above) • CASSCF calculations with MP2 correlation for any specified set of states • MP3 and MP4(SDQ) energies and gradients • MP4(SDTQ) and MP5 energies • Configuration Interaction (CISD) energies & gradients • Quadratic CI energies & gradients; QCISD(TQ) energies • Coupled Cluster methods: restartable CCD, CCSD energies & gradients, CCSD(T) energies; optionally inputamplitudes computed with smaller basis set • **Optimized memory algorithm to avoid I/O during CCSD iterations** • Brueckner Doubles (BD) energies and gradients, BD(T) energies; optionally input amplitudes & orbitals computed with a smaller basis set • **Enhanced** Outer Valence Green's Function (OVGF) methods for ionization potentials & electron affinities • Complete Basis Set (CBS) MP2 Extrapolation • Douglas-Kroll-Hess scalar relativistic Hamiltonians **Automated High Accuracy Energies** • G1, G2, G3, G4 and variations • CBS-4, CBS-q, CBS-QB3, ROCBS-QB3, CBS-Q, CBS-APNO • W1U, W1BD, W1RO (**enhanced core correlation energycalculation**) **Basis Sets and DFT Fitting Sets** • STO-3G, 3-21G, 6-21G, 4-31G, 6-31G, 6-31G†, 6-311G, D95, D95V, SHC, CEP-*n*G, LanL2DZ, cc-pV{D,T,Q,5,6}Z, Dcc-p{D,T}Z, SV, SVP, TZV, QZVP, EPR-II, EPR-III, Midi!, UGBS*, MTSmall, DG{D, T}ZVP, **CBSB7** • **Augmented cc-pV*Z schemes: Aug- prefix, spAug-, dAug-, Truhlar calendar basis sets (original and regularized)** • Effective Core Potentials (through second derivatives): LanL2DZ, CEP through Rn, Stuttgart/Dresden • Support for basis functions and ECPs of arbitrary angular momentum • DFT FITTING SETS: DGA1, DGA1, W06, older sets designed for SVP and TZVP basis sets; auto-generated fitting sets; optionaldefault enabling of density fitting Geometry Optimizations and Reaction Modeling • Geometry optimizations for equilibrium structures, transition structures, and higher saddle points, in redundant internal, internal (Z-matrix), Cartesian, or mixed internal and Cartesian coordinates • **GEDIIS optimization algorithm**				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	Redundant internal coordinate algorithm designed forlarge system, semi-empirical optimizations • Newton-Raphson and Synchronous Transit-Guided Quasi-Newton (QST2/3) methods for locating transitionstructures • IRCMax transition structure searches • Relaxed and unrelaxed potential energy surface scans • Implementation of intrinsic reaction path following (IRC), applicable to ONIOM QM:MM with thousands ofatoms • Reaction path optimization • BOMD molecular dynamics (all analytic gradient methods); ADMP molecular dynamics: HF, DFT, ONIOM(MO:MM) • Optimization of conical intersections via state-averaged CASSCF • **Generalized internal coordinates for complexoptimization constraints** Vibrational Frequency Analysis • Vibrational frequencies and normal modes (harmonic and **anharmonic**), including display/output limiting tospecified atoms/residues/modes (optional mode sorting) • Restartable analytic HF and DFT frequencies • MO:MM ONIOM frequencies including electronic embedding • Analytic Infrared and static and dynamic Raman intensities (HF & DFT; MP2 for IR) • Pre-resonance Raman spectra (HF and DFT) • Projected frequencies perpendicular to a reaction path • NMR shielding tensors & GIAO magnetic susceptibilities (HF, DFT, MP2) and enhanced spin-spin coupling (HF, DFT) • Vibrational circular dichroism (VCD) rotational strengths (HF and DFT; harmonic and **anharmonic**) • Dynamic Raman Optical Activity (ROA) intensities (harmonic and **anharmonic**) • **Raman and ROA intensities calculated separately from force constants in order to use a larger basisset** • Harmonic vibration-rotation coupling **Enhanced** anharmonic vibrational analysis, including **IRintensities, DCPT2 & HDCPT2 method for resonance-free computations of anharmonic frequencies** • Anharmonic vibration-rotation coupling via perturbationtheory • Hindered rotor analysis Molecular Properties • Population analysis, including per-orbital analysis for specifed orbitals: Mulliken, Hirshfeld, **CM5** • **Computed atomic charges can be saved for use in a later MM calculation** • Electrostatic potential, electron density, density gradient, Laplacian, and magnetic shielding & induced current densities over an automatically generated grid • Multipole moments through hexadecapole • Biorthogonalization of MOs (producing corresponding orbitals) • Electrostatic potential-derived charges (Merz-Singh-Kollman, CHelp, CHelpG, **Hu-Lu-Yang**)				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	• Natural orbital analysis and natural transition orbitals • Natural Bond Orbital (NBO) analysis, including orbitalsfor CAS jobs. Integrated support for NBO3; **external interface to NBO6** • Static and frequency-dependent analytic polarizabilitiesand hyperpolarizabilities (HF and DFT); numeric 2nd hyperpolarizabilities (HF; DFT w/ analytic 3rd derivs.) • Approx. CAS spin orbit coupling between states • Enhanced optical rotations and optical rotary dispersion (ORD) • Hyperfine spectra components: electronic *g* tensors, Fermi contact terms, anisotropic Fermi contact terms, rotational constants, dipole hyperfine terms, quartic centrifugal distortion, electronic spin rotation tensors, nuclear electric quadrupole constants, nuclear spin rotation tensors • ONIOM integration of electric and magnetic properties ONIOM Calculations • Enhanced 2 and 3 layer ONIOM energies, gradients and frequencies using any available method for any layer Optional electronic embedding for MO:MM energies, gradients and frequencies implemented so as to include all effects of the MM environment without neglecting terms in its coupling with the QM region • Enhanced MO:MM ONIOM optimizations to minima and transition structures via microiterations including electronic embedding • Support for IRC calculations • ONIOM integration of electric and magnetic properties Excited States • ZINDO energies • CI-Singles energies, gradients, & freqs. • Restartable time-dependent (TD) HF & DFT energies, gradients and **frequencies**. **TD-DFT can use the Tamm-Dancoff approximation**. • **SAC-CI energies and gradients** • EOM-CCSD energies and **gradients** (restartable); optionally input amplitudes computed with a smaller basis set • **Franck-Condon, Herzberg-Teller and FCHT analyses** • **Vibronic spectra including electronic circular dichroism (ECD) rotational strengths (HF and DFT)** • **Resonance Raman spectra** • **Ciofini's excited state charge transfer diagnostic (D_{ct})** • **Caricato's EOMCC solvation interaction models** • CI-Singles and TD-DFT in solution • State-specific excitations and de-excitations in solution • **An energy range for excitations can be specified for CISand TD excitation energies** Self-Consistent Reaction Field Solvation Models • New implementation of the Polarized Continuum Model (PCM) facility for energies, gradients and frequencies • Solvent effects on vibrational spectra, NMR, and other properties				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	• Solvent effects for ADMP trajectory calcs.
	• Solvent effects for ONIOM calculations
	• Enhanced solvent effects for excited states
	• SMD model for ΔG of solvation
	Other SCRF solvent models (HF & DFT): Onsager energies, gradients and freqs., Isodensity Surface PCM (I-PCM) energiesand Self-Consistent Isodensity Surface PCM (SCI-PCM) energies and gradientsEase-of-Use Features
	• Automated counterpoise calculations
	• Automated optimization followed by frequency or singlepoint energy
	• Ability to easily add, remove, freeze, differentiate redundant internal coords.
	• Simplified isotope substitution and temperature/pressure specification in the route section
	• Optimizations
	  • **Retrieve the *n*th geometry from a checkpointfile**
	  • **Recompute the force constants every *n*th stepof a geometry optimization**
	  • **Reduce the maximum number of allowed steps, including across restarts**
	  • **180° flips detected and suppressed for better visualization**
	• Freezing by fragment for ONIOM optimizations
	• Simplified fragment definitions on molecule specifications
	• Many more restartable job types
	• Atom freezing in optimizations by type, fragment, ONIOM layer and/or residue
	• QST2/QST3 automated transition structure optimizations
	• Saving and reading normal modes
	• **%OldChk Link 0 command specifies read-only checkpoint file for data retrieval**
	• Default.Route file for setting calculation defaults
	• **Enhanced set of equivalent Default . Route directives,Link 0 commands, command line options and environment variables**
	Integration with External Programs
	• **NBO 6**
	• COSMO/RS
	• AIMPAC WfnX files
	• **Antechamber**
	• **ACID**
	• Pickett's program
	• **DFTB input file**
	General external interface script-based automation, results post-processing, interchanging data/calculation results with other programs, and so on:
	• **Interface routines in Fortran, Python and Perl(open source)**
	• Keyword and **Link 0 command** support				

Phone: 09175030963
(+6385) 341-2296
URL: http://www.carsu.edu.ph
Email: csu.bacsecretariat@carsu.edu.ph

	With installation and technical support **E. SOLID STATE SOFTWARE** 30 Lab pack license Should be a perpetual license Should be a flexible configuration license (can be networkfloating licenses or stand-alone licenses). With Technical Support & Elite Maintenance Program (EMP),12-Months • **Feature** • Predict, explore, and design novel molecules in a powerful, easy-to-use environment. • Combines modern quantum chemistry software techniques with the mathematical power and usability to provide a comprehensive, easy-to-use environment for the parallel computation of the electronic energiesand properties of molecules. • Define molecules instantly from a database of more than 96 millionmolecules • Run quantum computations with well-known electronic structure methods as well as recently developed advanced methods, enablingcutting-edge research • Analyze molecular energies and properties through publication-quality, 2-D and 3-D plots and animations. With installation and technical support				
	Additional Requirement: **- Certificate of Availability of Technical Personnel for repair and maintenance purposes** **- Document/s reflecting the name of the technical personnel who will conduct the repair & maintenance upon the request of the University attaching further contract/agreement as proof.**				

For guidance and information of all concerned.

ARMIE LEILA M. MORDENO, DPA, CSEE
BAC Chairperson

Received by the Bidder:

_____

_____