

ANNEX A – STATEMENT OF REQUIREMENT

1.0 SINGLE PROCESSOR ENGINEERING WORKSTATION

The workstation must meet or exceed the following mandatory requirements.

(a) **Processor and Chip Set**

- (i) Intel Xeon W2145
- (ii) The processor must operate at the CPU manufacturer's specified megahertz frequency or rated speed, and return these results when queried with the CPU identification utility.
- (iii) Processor specifications, features and values must be identical to the manufacturer's published "reference design" standard. Specifications and values may not be achieved through overclocking or other means that depart from the manufacturer's published "reference design" standard.
- (iv) The chip set must be the Intel C422.

(b) **Operating System**

- (i) The workstation must support and be 100% compatible with Ubuntu Linux 18.04. Ubuntu will be installed and configured by the end user.

(c) **RAM**

- (i) 128GB. (8x16 GB) DDR4 2666 MHz ECC RDIMM RAM.
- (ii) All RAM must be manufactured by an ISO (International Standards Organization) 9001 certified manufacturer. The ISO certification applies to the RAM module manufacturing process.
- (iii) All memory upgrades or their equivalents must be accessible for at least 5 years after device purchase.

(d) **Internal Drives and Controller**

- (i) One 512 GB M.2 PCI Express 3.0 NVMe (Non-Volatile Memory Express) class 40 SSD.
- (ii) SSD Drives must be housed in a PCIe 16x drive carrier which must support an expansion of up to 4 M.2 drives.
- (iii) One 16x DVD +/- RW optical drive

(e) **Video**

- (i) A discrete PCI-Express 16x video controller based on a Nvidia Quadro P600 GPU with 2 GB video RAM and 4 Mini-DisplayPort interfaces

(f) **Audio**

- (i) The device must have a high definition audio controller that supports at least two channels.

(g) **Integrated 10/100/1000 Base TX Ethernet adapter with remote wake up and PXE support**

- (i) The device must have an internal Ethernet 10/100/1000 network adapter.

(h) **Security**

The device must include the following hardware security devices and services:

- (i) Integrated embedded FIPS 140-2 compliant and TCG certified TPM (Trusted Platform Module) vers. 2.0 allowable in tamper-proof iterations only.
- (ii) All devices must have NIST SP 800-147 compliant, secure UEFI.
- (iii) Absolute Data & Device Security (not-enabled)
- (iv) OEM created and supplied UEFI security features and related security utilities that allow for the set-up and/or management of:

1. Embedded UEFI/BIOS tamper resistance
2. Embedded UEFI/BIOS secure data isolation
3. Pre-boot and multi-factor authentication set up (if two levels of authentication are deployed)
4. Encrypted containment of multi-factor credential data to facilitate single pre-boot authentication log in up (if two levels of authentication are deployed).

(i) **External Ports and Internal Expansion**

The device must physically have the following interfaces before configuration:

- (i) At least eight full sized USB ports, two ports must appear on the case front.
- (ii) Two PS/2 ports
- (iii) One full sized RJ-45 with gigabit support
- (iv) Audio UAJ port. This must appear on the case front.
- (v) At least six internal SATA vers. 3.0 storage connectors
- (vi) At least Five PCIe 3.0 expansion slots, two of which must be PCIe 3.0 wired as x16x, and at least one of which must be wired as x8. If the wired x8 slot is mechanically an x8 slot, it must be an open-ended connector to allow a greater bandwidth card (x16) to be installed physically.
- (vii) Four internal 2 ½ inch or 3 ½ inch drive bays
- (viii) At least one external, front facing drive bay

(j) **Power**

- (i) The power supply must supply a minimum 690 watts.
- (ii) The power supply must meet the 80Plus Gold certification.
- (iii) The configuration must run on 110-125 volts AC @ 60 Hz.

(k) **Case/ Chassis**

- (i) The case must include a Kensington lock slot or equivalent.
- (ii) Chassis Dimensions must meet following constraints:
 - (A) Height must not exceed 22 inches
 - (B) Width must not exceed 9 inches

2.0 HARDWARE CERTIFICATIONS AND APPROVALS

- (a) All high-voltage electrical equipment supplied under the Contract must be certified or approved for use in accordance with the Canadian Electrical Code, Part 1, prior to delivery, by an agency accredited by the Standards Council of Canada. Notebooks must bear the certification logo that is applicable to the accredited agency. Current accredited agencies include, but are not exclusively comprised of:
 - (i) Canadian Standards Association (CSA).
 - (ii) Underwriters' Laboratory Inc. (cUL) (cULus).
 - (iii) Underwriters' Laboratories of Canada (ULC).
 - (iv) QPS Evaluation Services (cQPS) (formerly Entela Canada (cEntela).
 - (v) Intertek Testing Services (cETL).
 - (vi) Met Laboratories (cMET).
 - (vii) OMNI Environmental Services Inc (cOTL).
 - (viii) TUV Rhineland of North America (cTUV)

- (ix) Nemko Canada (cN)
- (b) Workstations must comply with the emission limits and labelling requirements set out in the Interference Causing Standard ICES-003, "Digital Apparatus", published by Industry Canada.
- (c) Workstations that have obtained Industry Canada ICES-003 approval that have been assembled from tested components and have not undergone entire device testing will be considered non-compliant. All devices tested must bear the appropriate labels indicating trade name, model number, and the words indicating Industry Canada ICES-003 compliance.
- (d) Workstations must have ISV (Independent Software Vendor) certifications for a minimum of 8 distinct applications. A minimum of 5 ISVs must be included in those certifications and must include any of the following: Adobe, ANSYS, Autodesk, Avid, Bentley, Dassault Systemes, ESRI, Schlumberger, Siemens, fA – GeoTerac, Landmark, PTC, MSC Software. Where applicable, ISV certifications must be applicable to the device and not just the video controllers.

3.0 ENVIRONMENTAL STEWARDSHIP

- (a) In support of the Canadian Federal Government's Sustainable Development Strategy, which includes policies on Green Procurement, the device manufacturers must commit to a comprehensive, nationally recognised environmental standard for:
 - (i) The reduction or elimination of environmentally hazardous materials
 - (ii) Design for reuse and recycling
 - (iii) Energy efficiency
 - (iv) End of Life Management for reuse and recycling
 - (v) Environmental stewardship in the manufacturing process
 - (vi) Packaging
- (b) Workstations must be certified through the Electronic Product Environmental Assessment Tool (EPEAT 2006) Gold level. The device must appear on the EPEAT product registry prior to bid closing.
- (c) Appliances must be Energy Star certified in accordance with EPEAT's mandatory requirements.
- (d) Workstation manufacturer must be ISO 14001:2015 certified for Environmental Management

4.0 TELEPHONE SUPPORT

- (a) The Original Equipment Manufacturer (OEM) must provide end-user accessible telephone hardware technical support for all supplied devices, involving hardware troubleshooting, configuration support and any systemic software/hardware interoperability issues and/or connectivity issues.
- (b) The telephone support staff must support:
 - (i) All components of the device supplied.
 - (ii) Peripherals, if supplied by the Offeror as it relates to the Offeror's device.
 - (iii) Connectivity issues relating to all terrestrial and wireless communications devices supplied.
- (c) The telephone support line must:
 - (i) Be a toll free service.
 - (ii) Employ a minimum staff of five device engineers concurrently during regular business hours (8:00 a.m. to 6:00 p.m. in all Canadian time zones), from Monday through Friday excluding Federal Government holidays.
 - (iii) Offer this support service in both official languages (French and English) based on the caller's choice.
 - (iv) Be accessible from all parts of Canada, United States and from international locations where service is available.

- (v) Use a serial number or service number tracking system that identifies all components, respective versions and respective driver versions of the installed device undergoing the troubleshooting.
- (vi) Use an electronically shared, nation-wide knowledge database to be used by support staff for all troubleshooting expertise, product idiosyncrasies and configuration parameters and all warranty entitlements for each specific component supplied.
- (vii) Provide a minimum 90% first call connection rate to a trained and qualified support technician. If a message centre expedites the call a trained and qualified technician must respond, in the language of the caller's choosing, within one hour. During the call the technician must engage in a problem diagnosis process with the customer prior to a service call being placed.
- (viii) Not exceed an on-hold time of more than five minutes on initial call.
- (ix) Be at no additional cost (i.e. included in the cost of the device). The cost of the service must be included the cost of the device.
- (x) Be available for the life of the purchased 5 year hardware warranty.

5.0 WEB SITE SUPPORT

The Original Equipment Manufacturer (OEM) must provide an Internet site offering:

- (a) Support file areas offering download/upload access for drivers, setup and configuration files and other pertinent software. These files, drivers and documents must be clearly identified as pertaining to the specific make and model of the device.
- (b) Message areas for technical assistance and problem diagnosis with system engineers.
- (c) Technical information library for downloading product information files, pertinent white papers, default device user service manuals (French and English).
- (d) FAQ (frequently asked questions) areas specific to the device delivered.
- (e) Bulletins pertaining to product announcements, product recalls, component recalls bug fixes, etc.
- (f) Customized notification subscription services to alert clients of device driver revisions, BIOS/firmware updates that pertain to the exact model family, product recalls, component recalls.
- (g) The web site support features must be contained on the default device original equipment manufacturers web site. Links to other manufacturer's web sites cannot be used to achieve the mandatory requirements stated in this article.
- (h) The web site support features must be available in French and English including the final destination page. Exceptions for unilingual content are allowed for technical descriptions, support forums, part number references and technical documentation.

6.0 HARDWARE MAINTENANCE SERVICE

- (a) **Manufacturer's Warranty:** If the Contractor wishes to rely on the Manufacturer's warranty to provide the Hardware Maintenance Services, the Contractor must complete all warranty registration requirements with any Manufacturers on behalf of the Identified User. The Offeror must also notify the Identified User in writing of any requirement to register for international warranty coverage required if the end user will travel abroad with Products supplied under this Contract. Regardless of any Manufacturer's warranty, the responsibility for providing the Hardware Maintenance Services remains with the Contractor.
- (b) **Magnetic Media:** To maintain the confidentiality of information that may be recorded on a hard disk drive (HDD) or solid state drive (SSD) based product requiring Hardware Maintenance Services, the HDD or SSD media in all components requiring replacement must remain in the possession of Canada. Faulty HDDs or SSDs will not be returned to the Manufacturer and Offerors need to factor that into their cost.

- (c) The mandatory conditions of the warranty applicable to the ensuing contract are detailed under the Standard Acquisition Clauses and Conditions and are found at <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4001/6>
- (d) The warranty period for the workstation is 5 years on-site. *NOTE: Environment and Climate Change Canada may include additional warranty options after 5 years (to be determined).*

7.0 OTHER REQUIREMENTS

(a) **Cabling**

The following cabling is required (or less) for each workstation, numbers will be confirmed:

- (i) Three 10 ft Mini DisplayPort to DisplayPort 1.2 Adapter Cable M/M, each supporting resolutions of up to 4k x 2k (3840 x 2160) @ 60Hz with a maximum HBR2 bandwidth of 21.6 Gbps
- (ii) One Mini DisplayPort to DVI Video Adapter Converter 1920x1200, Mini DP to DVI-I Passive Adapter M/F, supporting resolutions up to 1920x1200. Must be a passive adapter

(b) **Other**

- (i) Keyboard (Please Annex C Delivery Information for English and Bilingual Quantities)
- (ii) Mouse