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Core 0A1 / Noyau 0A1
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Industrial Vehicles & Machinery Products Division
11 Laurier St./11, rue Laurier
7B1, Place du Portage, Phase III
Gatineau
Québec
K1A 0S5

Title - Sujet VÉHICULES DE CONSTRUCTION DE LIGNES		
Solicitation No. - N° de l'invitation W8476-144458/A		Amendment No. - N° modif. 004
Client Reference No. - N° de référence du client W8476-144458		Date 2013-10-04
GETS Reference No. - N° de référence de SEAG PW-\$\$HS-636-63376		
File No. - N° de dossier hs636.W8476-144458	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-10-31		Time Zone Fuseau horaire Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>		
Address Enquiries to: - Adresser toutes questions à: Khan, Shazia		Buyer Id - Id de l'acheteur hs636
Telephone No. - N° de téléphone (819) 956-7345 ()		FAX No. - N° de FAX (819) 956-5227
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:		

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

AMENDMENT 004

This amendment is raised to modify the Purchase Description (PD) and to provide questions and answers to potential bidders as follows:

1. Purchase Description for Tracked Line Construction Vehicle 40ft dated August 2013

Delete: in its entirety

Insert: Purchase Description for Tracked Line Construction Vehicle 40ft dated 01 October 2013

2. Question: On the digger side:

Para 3.12.1 (f) Digging radius, we would be from 14.2 to 21.5

Answer: The word *shall* will be changed to *shall^(E)*. The PD will be amended to reflect this change. Consequently, an equivalent can be offered, therefore please provide details in the bid package. During the bid evaluation, the Technical Authority will do the evaluation and decide to accept it or not.

Question: On the digger side:

Para 3.12.3 (b) Can we use another brand than Kentucky, Pengo is normally the one offered.

Answer: At Para 3.12.3 (b), the brand name Kentucky will be deleted in the PD. The PD will be amended to reflect this change.

Question: On the digger side:

Para 3.12.4 (d) The bucket rotator is not offered on the digger derricks

Answer: This is a *shall^(E)* requirement, therefore equivalent can be offered. Please provide details in the bid package. During the bid evaluation, the Technical Authority will do the evaluation and decide to accept it or not.

Question: On the digger side:

Para 3.12.19 (e) Upper controls would be permanently mounted, but not fully hydraulic, in-order to keep space for other functions. They can also be pinned to either the second or third stage.

Answer: This is a *shall*^(E) requirement, therefore equivalent can be offered. Please provide details in the bid package. During the bid evaluation, the Technical Authority will do the evaluation and decide to accept it or not.

Question: Para 3.11 (f) - Our standard units are equipped with an hour meter in lieu of an odometer. An hour meter is traditionally used in equipment which is both driven and used stationary as it provides a true indication of equipment use. Is this acceptable?

Answer: DELETE

Para 3.11 (f) **Odometer**;

INSERT

Para 3.11 (f) **Hour-meter** - An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours;

Question: Para 3.6.1 (g) The auxiliary gear pump is sized so that the GPM provided at engine idle is suitable for aerial device operation, negating the requirement for an automatic fast idle device. Is this acceptable?

Answer: Requirement identified by the word 'shall' is mandatory. Deviation will not be permitted.

Question: Para 3.6.1 (h) The engine used in our standard unit is a mechanical injection diesel engine with no allowance for an electronic adjusting hand throttle. We provide mechanical hand throttles. Is this acceptable?

Answer: Requirement identified by the word 'shall' is mandatory. Deviation will not be permitted.

Question: Para 3.12.1 (h) Our standard units are now equipped with a planetary drive rotation which provides better protection against side loading than a worm gear drive. Is this acceptable?

Answer: DELETE

Para 3.12.1 (h)

INSERT

Para 3.12.1 (h) ***Shall*** have 360 degree continuous rotation or a minimum 370 degrees non-continuous rotation. If non-continuous is used, the rotation stop ***shall***^(E) be at forward centre of turret to allow free rotation at rear of tracked vehicle;

Question: 3.12.5 (a) Our standard pole puller has a rated capacity of 23 500kg at 3,000 psi and comes with a high pressure tools circuit for the operation of the pole puller. This allows us to meet the capacity requirement with a lighter, ergonomically friendly unit. Is this acceptable?

Answer: The word ***shall*** will be changed to ***shall***^(E). The PD will be amended to reflect this change. Consequently, an equivalent can be offered, therefore please provide details in the bid package. During the bid evaluation, the Technical Authority will do the evaluation and decide to accept it or not.

All other terms and conditions remain the same.



NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées.

PURCHASE DESCRIPTION FOR TRACKED LINE CONSTRUCTION VEHICLE 40ft

1. SCOPE

1.1 Scope - This Purchase Description describes the requirements for tracked line maintenance type vehicles with a rear mounted Digger Derrick unit. The tracked vehicle will be used in domestic and expeditionary operations for aerial, overhead and underground telecommunications cable installation and maintenance, post/pole hole digging, setting, and removal.

1.2 Instructions - The following instructions *shall* be applied to this Purchase Description:

- (a) Requirements, which are identified by the word “*shall*”, are mandatory. Deviations will not be permitted;
- (b) Requirements identified by “*shall*^(E)” are mandatory. The Technical Authority will consider substitutes/alternatives for acceptance as an Equivalent;
- (c) Requirements identified with a “will” define actions to be performed by Canada and require no action/obligation on the Contractor’s part;
- (d) Where “*shall*”, “*shall*^(E)”, or “will” are not used, the information provided is for guidance only;
- (e) In this document “provided” *shall* mean “provided and installed”;

OPI DSVPM 4 – DAPVS 4

Issued on Authority of the Chief of the Defence Staff

Publiée avec l’autorisation du Chef d’état-major de la Défense

- (f) Where technical certification is required, a copy of the certification or an acceptable **Proof of compliance** *shall* be provided upon request, at no cost to Canada;
- (g) Metric measurements *shall* be used to define the requirement. Other measurements are for reference only and may not be exact conversions; and
- (h) Dimensions stated as nominal *shall* be treated as approximate dimensions. Nominal dimensions reflect a method by which materials or products are generally identified for sale commercially, but which differ from the actual dimensions.

1.3 Definitions - The following definitions apply to the interpretation of this Purchase Description:

- (a) **“Technical Authority”** - The government official responsible for technical content of this requirement;
- (b) **“Equivalent”** - A standard, means, or component type, which has been accepted by the Technical Authority as meeting the specified requirements for form, fit, function and performance;
- (c) **“Proof of Compliance”** - Is defined as an unaltered document, such as a brochure and/or technical literature and/or a third party test report provided by a nationally and/or internationally recognized testing facility and/or a report generated by a nationally and/or internationally recognized third party software. The document shall provide detailed information on each performance requirement and/or specification. Where a document submitted as Proof of Compliance does not cover all the performance requirements and/or specifications or when no such document is available or when modifications to the original equipment or customization are required to achieve the performance requirements and/or specifications, a Certificate of Attestation (as a separate document) signed by a senior engineer representing the Original Equipment Manufacturer (OEM) detailing the modifications and how they meet the performance requirements and/or specifications shall be provided. The certificate shall detail all performance requirements and/or specifications required to substantiate compliance. One certificate can be provided for one or all performance requirements and/or specifications.
- (d) **“Tracked vehicle”** - refers to the cab, frame, and parts provided with the frame before the addition of the aerial;
- (e) **“Tracked vehicle/equipment”** - refers to the completely manufactured tracked lift platform vehicle with aerial device, and related parts and equipment installed;

2. APPLICABLE DOCUMENTS

2.1 Government Furnished Documents - Not applicable.

2.2 Other Publications - The following documents form part of this purchase description. Web sites for the organization are given when available. Effective documents are those in effect on date of manufacture. Sources are as shown:

Canadian Motor Vehicle Safety Standards (CMVSS)
Transport Canada,

Road Vehicle and Motor Vehicle Regulation.

330 Sparks Street,

Ottawa, Ontario K1A 0N5

<http://www.tc.gc.ca/acts-regulations/GENERAL/M/mvsa/menu.htm>

CAN/CSA C225-10 Vehicle Mounted Aerial Devices

CSA W47.1-09 Certification of Companies for Fusion Welding Steels

CSA W59-03 (R2008) Welded Steel Construction (Metal Arc Welding)

CSA W59.2-M1991 (R2008) Welded Aluminum Construction

Canadian Standards Association

5060 Spectrum Way, Suite 100

Mississauga, Ontario, L4W 5N6

<http://www.csa.ca/language/default.asp?thisUrl=%2FDefault%2Easp>

ANSI/ASSE A10.31-2006 Safety Requirements, Definitions and Specifications for Digger Derricks

American National Standards Institute

1819 L Street, NW, 6th Floor

Washington, DC, 20036

<http://www.ansi.org/>

International Organization for Standardization

ISO Central Secretariat

1, ch. de la Voie-Creuse

CP 56 - CH-1211 Geneva 20, Switzerland

<http://www.iso.org/>

Occupational Health and Safety Act (OHSA), 1990

Ontario Ministry of Labour,

400 University Ave.,

Toronto, Ontario M7A 1T7

<http://www.labour.gov.on.ca/>

SAE Handbook

Society of Automotive Engineers Inc.

400 Commonwealth Dr.,

Warrendale, PA, 15096

<http://www.sae.org>

FED STD 595C – Colors Used in Government Procurement

GSA - Specification Section

470 L'Enfant Plaza

Suite 8100

Washington, DC, 20407

<http://apps.fss.gsa.gov/pub/fedspecs/>

3. REQUIREMENTS

3.1 **Standard Design** - The tracked vehicle/equipment *shall*:

- (a) **Latest Model** - Be the manufacturer's latest model
- (b) **Industry Acceptability** – Have demonstrated industry acceptability by having been manufactured and sold commercially for at least 2 years, or, *shall* be manufactured by a company that has at least 5 years experience in design and manufacturing of a comparable type of equipment of equivalent or greater complexity. A product brochure *shall* be attached in bid submission;
- (c) **Engineering Certification** - Have engineering certification available, upon demand, for this vehicle/equipment from the original manufacturers of major equipment systems and assemblies;
- (d) **Regulation** - Conform to all applicable laws, regulations and industrial standards governing manufacture, safety, noise levels and pollution in effect in Canada at the time of manufacture;
- (e) **Published Ratings** – Not have system and component capacities increased above published ratings (i.e. product or component brochures) or accompanied by proof of compliance; and
- (e) **Standard Components** - Include all components, equipment, and accessories normally supplied for this application, although they may not be specifically described in this Purchase Description.

3.1.1 **Design Principles**

- (a) **Standard Components** - Commercially available standard parts complying with commercial standards *shall* be used wherever possible;
- (b) **Interchangeability** - All components, assemblies, and sub-assemblies used in the construction *shall* be designed and manufactured to dimensional tolerances, which will permit interchangeability and facilitate replacement of parts;
- (c) **Spare Parts** - The manufacturer *shall* select components readily available for a minimum period of fifteen (15) years from the date of manufacture;
- (d) **Maintainability** - All maintenance and repair tasks, especially routine operator maintenance, *shall* be easy to perform with a minimum of special tools and skills; and
- (e) **Modularity** - Major assemblies *shall* be easily disconnected and removed from the tracked vehicle without the necessity for extensive disassembly of components.

3.2 **Operating Conditions**

3.2.1 **Weather** - The tracked vehicle/equipment *shall* operate under the extremes of weather conditions found in Canada in temperatures ranging from -40 to 37° C (-40 to 99° F).

3.2.2 **Terrain** - The tracked vehicle/equipment *shall* be capable of being operated on off-road (e.g. construction sites, open fields, and dirt tracks). Terrain conditions *shall* include year round operations on snow, mud, sand and ice.

3.3 Safety

3.3.1 **Vehicle Safety Regulations** - The vehicle *shall* meet the provisions of the Canada Motor Vehicle Safety Act in effect on the date of manufacture of the vehicle. The completed vehicle *shall* have Safety Compliance Certification Label with a **National Safety Mark (NSM)**, as a seal of compliance. The bidder *shall* submit the variant equipment integrator NSM certification number as a proof of registration with Transport Canada as a final stage manufacturer.

3.3.2 **Aerial device safety** – The installation of the rear mounted aerial device and digger derrick *shall* comply with the most recent requirements of CSA C225-10 and ANSI/ASSE A10.31-2006 and relevant sections of the OHSA. All welded fabricated items; assemblies and sub-assemblies *shall* conform to the latest issue of CSA W59.

3.3.3 **Noise Levels** - The noise level *shall not* exceed:

- (a) 85 decibels (dB(A)) in the cab when measured in accordance with SAE Recommended Practice J336; and
- (b) 86 decibels (dB(A)) at the tracked vehicle platform when measured in accordance with SAE Recommended Practice J1096.

3.3.4 **Human Engineering and Safety** – The tracked vehicle/equipment, all systems and components *shall*:

- (a) Be safe and easy to use by a 95th percentile male or 5th percentile female under all operating conditions as published in SAE Recommended Practice J833;
- (b) Have all entry and exit points equipped with handles and steps suitably positioned, to accommodate a 95th percentile male or a 5th percentile female under all operating conditions; and
- (c) Be equipped, where required for operator safety, with safety features such as warning and instruction plates, non-slip walking surfaces and heat shields.

3.4 Tracked Vehicle Performance – The tracked vehicle with all specified equipment installed and fully loaded *shall* have the following performance:

- (a) Have a maximum forward speed of at least 12 km/h;
- (b) Have an uphill climbing capability of at least 60%;
- (c) Have a side hill climbing capability of at least 30%;
- (d) Have a ground pressure with 6” penetration of maximum 2.0 psi without load and maximum 5.0 psi fully loaded;

3.4.1 Weights and Dimensions

- (a) **Gross Vehicle Weight Rating (GVWR)** – The tracked vehicle *shall* have a gross vehicle weight not exceeding the GVWR, as published in the manufacturer’s literature and engineering data;

- (b) **Centre of Gravity** – The centre of gravity of the tracked vehicle/equipment under all loading conditions and driving positions **shall** be within the chassis manufacturer's allowable conditions.
- (c) The Contractor **shall** provide the following chassis information:
 - i Overall Width (OW): Width of body including tracks
 - ii Overall Height (OH): Height of body
 - iii Overall Length (OL): Length of body
 - iv Ground Clearance
- (d) Component, vehicle load and capacity ratings **shall** not be raised above normal commercial levels in order to meet the requirements of this purchase description.

3.4.2 **Vehicle Delivery Condition** – The tracked vehicle/equipment **shall** be delivered to destination in a fully operational condition (serviced and adjusted) and both the interior and exterior **shall** be cleaned. If the tracked vehicle requires assembly at destination, the Contractor **shall** be responsible for all manpower and equipment to perform assembly. The consignee will provide the area required for assembly. For shipment verification, all items such as wheel wrenches, jacks, and all other tools, equipment and accessories, which are shipped loose with the equipment, **shall** be listed on the shipping certificate or to an attached packing note.

3.5 **Cab, Chassis and Body**

3.5.1 **Cab** – The tracked vehicle cab **shall** be a one-person cab. The cab **shall**^(E) include:

- (a) **Door** - A door for entry and egress. The cab door **shall** be equipped with locks, capable of being opened independently from the exterior and interior of the cab;
- (b) **Ergonomic Features** - Hand grips, steps (not removable), and other features required for the safe entry and egress for the range of fifth percentile female to ninety-fifth percentile male;
- (c) **Front mounted brush-guard;**
- (d) **Escape Hatch** - An escape hatch with a detachable tempered glass that accommodates the range of fifth percentile female to ninety-fifth percentile male;
- (e) **Windows** - Windows on the driver and curb-side of the sliding type;
- (f) **Premium Insulation** – Premium insulation in the cab including the floor;
- (g) **Trim** – Manufacturer's standard interior trim;
- (h) **Driver's Seat** –The driver's seat shall be a high-back air suspended seat with cloth inserts and retractable 3-points seat belt assembly;
- (i) **Mats** - Heavy duty rubber matting or spray polyurethane coating installed over the entire cab

floor;

- (j) **Temperature Controls** - High output temperature controlled fresh air heater and defroster adequate for the operating conditions specified;
- (k) **Air-Conditioning** - Air-Conditioning equipped with all components and controls required for regulation of the cab interior temperature. The air conditioning system *shall* not use ozone-depleting refrigerants (chlorofluorocarbons (CFCs)) and *shall*^(E) use hydrofluorocarbons (HFCs);
- (l) **Interior sun visors**;
- (m) **Mirror** - One rectangular, external rear view mirror with replaceable heads and glass, located on the driver's side of the tracked vehicle which provide the clearest possible undistorted view to the rear from the driver's position. The mirror *shall* be constructed such that the mirror glass is shock mounted and sealed against the ingress of moisture; The mirror *shall*^(E) be equipped with lights, defroster elements, a convex portion on each side, and be capable of folding rearward against the tracked vehicle. Power mirror is desirable;
- (n) **Windshield wipers** - Intermittent windshield wiper(s) capable of clearing the windshield during driving operations and where the wiper blades **do not** travel from a vertical centre windshield position to a horizontal position near the roof line;
- (o) **Halogen headlights**; and
- (p) **Panel lights** - Interior and instrument panel lights to provide adequate lighting for nighttime operations.

3.5.1.1 **Roll-over Protection**: The cab *shall* be ISO 3471 or SAE J1040 Roll-over protection certified.

3.5.2 **Frame** – The frame *shall* be strong at the towing and mounting points and suitable for the application. The frame *shall*^(E) be a welded steel tub type.

3.5.2.1 **Sub-Frame** – The sub-frame *shall*^(E) be a full length, heavy duty, tubular steel frame directly attached to the outriggers to constitute a complete unit.

3.5.3 **Body** – The body *shall* be the manufacturer's standard or standard option proven suitable in service in this application. The body *shall*^(E) include:

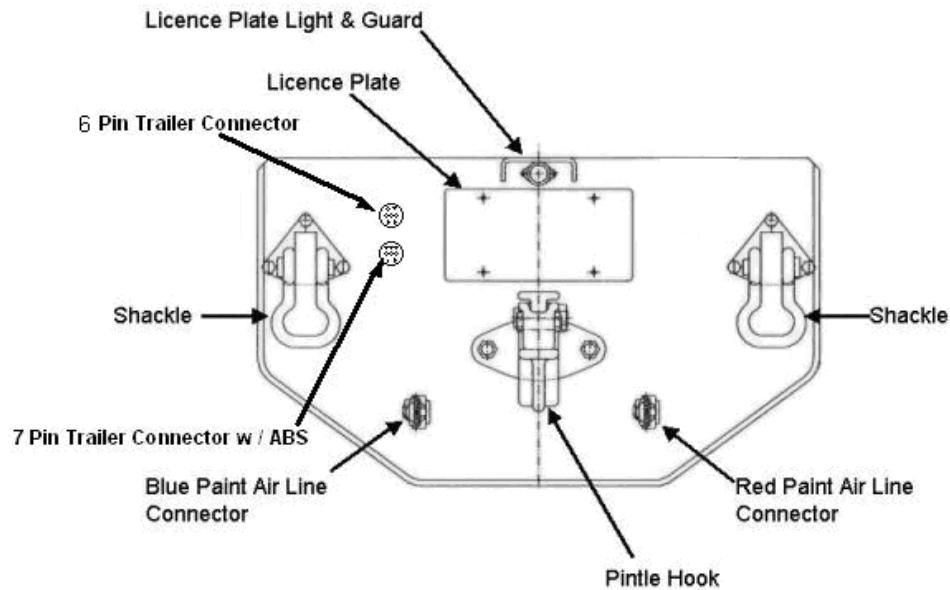
- (a) Floor panels constructed of a minimum thickness 4.8mm (3/16 inch) checker plate including deck entrance steps;
- (b) Folding rear deck entrance steps;
- (c) Assist grab handles at all deck entrances;
- (d) Aluminum drip mouldings *shall* be installed over all doors and access panels;
- (e) Removable side ladder for access to the deck;
- (f) Removable wooden side walls;

- (g) Have a “U” channel complete with wood manufactured material stops at rear deck entrance;
- (h) Aluminum rock guards to protect exposed areas on the front corners;
- (i) At least six (6) 907 kg recessed tie-down loops on deck, evenly spaced, for cargo lashing;
- (j) At least 2 racks to carry poles;
- (k) Front and rear centre located 2” square receiver sockets; and
- (l) Front and rear rectangular ground lugs.

3.5.3.1 **Trailer Capability** – The following *shall* be provided for the capability to attach a trailer:

- (a) Rear pintle hook complete with frame reinforcement capable of towing the maximum allowed Gross Trailer Weight for the tracked vehicle provided. The pintle hook *shall*^(E) be Holland Hitch model PH-T-60-AOL-8.
- (b) Two (2) safety chain towing shackles *shall* be installed on both sides of the pintle hook.
- (c) In case a plate is required for pintle hook installation, the plate *shall* be fabricated using steel. Stress analysis *shall* be conducted to confirm the ability of the plate to withstand the maximum towed load capability of the vehicle. The result of the analysis *shall* be provided to the Technical Authority upon request. A line drawing for the plate design *shall* be provided to Technical Authority upon request. The line drawing shall detail the location of the following components:
 - i The licence plate;
 - ii Licence plate light and guard;
 - iii Two shackles; and
 - iv Six-pin trailer connector.

NOTE: An example of a pintle hook set up describe in 3.5.4.2 is provided below.



Licence Plate Light & Guard	Feu et cache de plaque d'immatriculation
Licence Plate	Plaque d'immatriculation
6 Pin Trailer Connector	Prise de remorque à 6 broches
Shackle	Maillon d'attache
7 Pin Trailer Connector w / ABS	Prise de remorque à 7 broches avec ABS
Blue Paint Air Line Connector	Raccord de système de freinage pneumatique peint en bleu
Shackle	Maillon d'attache
Red Paint Air Line Connector	Raccord de système de freinage pneumatique peint en rouge
Pintle Hook	Crochet d'attelage

3.6 Engine – The engine *shall*^(E) be turbocharged and *shall* be capable of operating on diesel fuel to the CAN/CGSB Standard 3.517-2007. The engine *shall* be compliant with current EPA standards at the time of production. The design of the engine system *shall* include:

- (a) A control system suitable for this application;
- (b) A horsepower sufficient enough to meet all performance requirements; and
- (c) Engine manufacturer's certification *shall* be available upon request.

3.6.1 Engine Components - The engine *shall* include:

- (a) A severe service air cleaner protected from the ingress of rain and snow;
- (b) A full flow oil filter with a spin-on or replaceable type element;
- (c) A governor to limit engine speed to the operating range recommended by the engine manufacturer;

- (d) Engine coolant and a heavy duty cooling system recommended by the OEM that is capable of operating within the conditions stated in section 3.2;
- (e) A thermostatically controlled ON/OFF type fan clutch unless the engine is intercooled;
- (f) A fan shroud;
- (g) A fast-idle device to automatically set engine idle speed at a predetermined rpm when activated for aerial device operation;
- (h) An electronic adjusting hand throttle;
- (i) An automatic shutdown system for low oil pressure and high coolant temperature. Indicator lights *shall*^(E) be located at each control station to indicate a shut down due to low oil pressure or high temperature; and
- (j) Any measures other than those already required by this purchase description that are necessary to adhere to the engine manufacturer's recommendations for aerial device and tracked vehicle operation under cold weather conditions.

3.6.2 **Fuel Tank(s)** – The design of the fuel tank(s) *shall*:

- (a) Include a tank with a minimum capacity for 10 hours continuous operation;
- (b) Include primary and secondary fuel filters;
- (c) Include a non-spill type air vent with filler cap marked “Diesel Fuel Only”;
- (d) Include sufficiently protected drain valve(s);
- (e) Include a switch for selection of the fuel tank and gauge, if more than one fuel tank is provided; and
- (f) Be at least half full when delivered to the destination.

3.6.3 **Primary Cold Weather Aids** – The engine *shall* be equipped with cold weather aids to enable the engine (operating with winter grade fuels/oils) to be started at soak temperatures down to -40° Celsius (-40° Fahrenheit), with an external power source. The following *shall*^(E) be included:

- (a) **Fuel Filter** - A water separator/fuel filter incorporating an electrical heating system to preheat diesel fuel prior to starting. The heater *shall* be thermostatically controlled.
- (b) **Fuel Heater** - An in-line fuel heater. The heater *shall*^(E) be thermostatically controlled to prevent fuel temperature from rising above approximately 43° Celsius (110° Fahrenheit) and be a heat exchanger type connected to the cooling system; and
- (c) **Low Temperature Starting Aids** - The engine *shall*^(E) have glow plugs and / or intake air preheat system.

3.6.4 **Auxiliary Cold Weather Aids** - The engine *shall* be equipped with auxiliary cold weather aids and both *shall*^(E) be connected on one outlet. The following auxiliary cold weather aids *shall* be:

- (a) **Block Heater** - 110-volt engine heater(s) with a capacity as recommended by the engine manufacturer or conforming to SAE Information Sheet J1310;
- (b) **Battery Heater** - 110-volt battery heater(s) having wattage matched to battery size to prevent battery damage due to overheating; and
- (c) **Coolant Heater** - 12-volt coolant heater with a capacity of 17000 BTU/h.

3.6.5 **Exhaust System** – The exhaust system *shall*:

- (a) Be non-intrusive to the tracked vehicle; and
- (b) Include a flame arrester.
- (c) Be applicable to meet the engine EPA standards.

3.7 **Track Drive Train and Suspension** - The track drive train and suspension *shall*^(E):

- (a) Be a two-speed, at a minimum, hydrostatic system;
- (b) Include two (2) independent hydrostatic pumps, one for each track;
- (c) Include an oil cooler of a capacity approved by the hydrostatic drive system manufacturer for the service intended;
- (d) Include an oil filter;
- (e) Include sufficient number of road wheels per track suitable for the requirement in this purchase description. Each road wheel *shall* have an independent torsion axle;
- (f) Include a drive sprocket and an idler for each track;
- (g) Include an adjustable tensioner. The tensioner *shall* be designed such that it can be adjusted at the operator skill level.

3.7.1 **Tracks** – The track *shall*:

- (a) Include rubber 5-ply belts as a minimum;
- (b) Include at least 29” rubber cross-links; and
- (c) Be able to be fitted with ice cleats when required. Ice cleats *shall* be provided with each tracked vehicle.

3.7.2 **Power Take-Off (PTO)** – The tracked vehicle *shall*^(E) have provisions for installing a PTO system. The Contractor *shall* provide the Technical Authority with the information that would be suitable for these provisions.

3.8 Braking system - The tracked vehicle *shall* be equipped with hydrostatic service brakes, capable of successfully completing the performance requirements specified in CMVSS.

3.8.1 Parking Brakes – The parking brakes *shall* be pressure release, spring applied, multi-disc type brakes. Parking brakes *shall* be automatically engaged prior to engine start-up.

3.9 Steering - The tracked vehicle *shall* be equipped with power assisted steering by means of joy sticks or a steering wheel.

3.10 Vehicle Controls - Controls *shall*^(E) conform to the general criteria set out in SAE J1814 and J898 and *shall*:

- (a) Not restrict the operator's field of view;
- (b) Be permanently marked to identify and show function of each control lever or switch with markings/instructions in English and French or international symbols as defined by SAE J1362. Markings *shall* include permanently attached instructions detailing operation of the engine, hydrostatic drive system, and attachments; and
- (c) Have controls easily accessible to the operator.

3.11 Vehicle Instruments – Instruments *shall* be readily visible while seated in the tracked vehicle driver's seat. Panel instrument lamps *shall*^(E) have a dimmer switch. Instruments *shall* include:

- (a) **Electrical Meter** - Ammeter or voltmeter;
- (b) **Oil pressure** - Oil pressure gauge with a low engine oil pressure indicator;
- (c) **Fuel Gauge(s)** - A fuel gauge or fuel gauges, as required;
- (c) **Coolant Temperature** – Coolant temperature gauge with a high coolant temperature indicator;
- (e) **Hydrostatic Drive System Temperature Gauge** - Hydrostatic drive system temperature gauge or warning device to indicate high temperature;
- (f) **Hour-meter** - An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours;
- (g) **Tachometer**; and
- (h) **Outrigger Position Warning Light.**

3.12 Equipment

3.12.1 Derrick – A hydraulic radial boom derrick *shall* be provided and the derrick:

- (a) *Shall*^(E) be rear mounted;
- (b) *Shall* have the following minimum sheave heights:

- i Upper boom – 12.19 meters (40 feet);
 - ii Intermediate boom – 9.15 meters (30 feet); and
 - iii Lower boom – 6.1 meters (20 feet).
- (c) **Shall** be a 3-stage box type construction boom, where:
- i The first and second stages are constructed of high strength steel;
 - ii The third stage is constructed of reinforced fibreglass; and
 - iii The boom is complete with a hydraulic pole guide (pole claw).
- (d) **Shall** be dielectrically tested to 46 kV in accordance with CSA C225-10 and ANSI/ASSE A10.31-2006;
- (e) **Shall** be capable of a minimum boom articulation range of 15 to 20 degrees below horizontal to 85 to 80 degrees above horizontal respectively;
- (f) **Shall^(E)** have a minimum digging radius of 3.05 meters (10 ft), and a maximum digging radius of 6.1 meters (20 ft). A 305 mm (1 ft) deviation is acceptable;
- (g) **Shall** be equipped with a boom overload protection system;
- (h) **Shall** have 360 degree continuous rotation or a minimum 370 degrees non-continuous rotation. If non-continuous is used, the rotation stop **shall^(E)** be at forward centre of turret to allow free rotation at rear of tracked vehicle;
- (i) **Shall** have a lateral reach, with the intermediate boom extended, of at least 6.1 metres (20 ft) and with fibreglass self-storing extension of at least 9.15 metres (30 ft);
- (j) **Shall** have the following minimum lifting capacities (with the auger stowed) (not bare boom):
- i 1,905 kg (4,200 lbs.) with the boom at maximum elevation above the horizontal and all booms extended;
 - ii 1,089 kg (2,400 lbs.) at 45 degrees with all booms extended; and
 - iii 409 kg (900 lbs.) at 0 degrees with all booms extended.

Note: A lift capacity chart **shall** be provided (showing load capacity vs. radius) for all boom positions.

- (k) Third extension applies:
- i A fibreglass hydraulic third extension **shall** be provided;
 - ii The third extension **shall^(E)** be at least 2.74 metres (9 feet) long; and

- iii A pulley at the end of the fibreglass extension **shall** be provided.
- (l) **Shall^(E)** be equipped with fully adjustable load holding valves on the boom lift cylinder, and one-way pilot operated holding valves on the boom lift cylinder and the boom extension cylinders. Where possible, these valves are desired to be integral with the cylinder. If not possible, high-pressure steel tubing **shall^(E)** be used between the hydraulic cylinder and the holding valve to adequately protect against damage;
- (m) **Shall^(E)** be equipped with pivot and lift cylinder pins with grease fittings; and
- (n) **Shall^(E)** be equipped with hydraulic digger mounting brackets on the main and intermediate boom sections.

3.12.2 **Winch** – The following winches **shall** be provided:

- (a) **Boom Tip Winch** - A hydraulic boom tip winch **shall** be provided. The minimum bare drum rated winch capacity **shall** be at least 2,268 kg (5,000 lbs). The winch **shall^(E)** be provided with a 23 metre (75 foot) long cable. The winch cables **shall^(E)** be supplied with a mechanical spliced eye at the end, of equal or greater strength than the cable.
- (a) **Front and Rear Winch** – A portable electric winch **shall^(E)** be provided as follows:
 - i The winch **shall** have a rated first layer capacity of at least 4,536 kg (10,000 lbs);
 - ii The winch **shall^(E)** be provided with a 76 m (250 feet) long cable;
 - iii Two hitch receivers **shall^(E)** be provided, one located behind an extended front bumper and one located at the rear of the vehicle;
 - iv The winch cable **shall^(E)** be supplied with a mechanical spliced eye at the end, of equal or greater strength than the cable.
 - v A wireless remote control unit powered in both directions **shall^(E)** be provided;
 - vi A snatch block capable of withstanding a double line pull capacity of the winch **shall^(E)** be provided; and
 - vii A roller fairlead **shall^(E)** be provided.

3.12.3 **Hydraulic Digger / Auger**

- (a) A two speed hydraulic digger **shall** be provided. The digger **shall** have a minimum torque rating of 12,000 ft-lbs at low speed and 3,000 ft-lbs at high speed;
- (b) Two (2) vehicle-mounted augers **shall** be provided as follows:
 - i One (1) 16” rock auger with 2.5” hex diameter;
 - ii One (1) 20” dirt auger with 2.5” hex diameter;

- iii Be equipped with carbide teeth; and
 - iv Come complete with a screw anchor wrench assembly for 1 ½” anchors and 2 ½” Kelly bar with locking dog assembly.
- (c) Oil auger release valve *shall*^(E) be provided;
 - (d) An auger overwind protection system *shall* be provided;
 - (e) A nylon rope to elevate the auger to the stored position *shall*^(E) be provided;
 - (f) All necessary plumbing and controls to operate digger *shall* be provided;
 - (g) Stowage for extension shaft and out-put digger shaft *shall* be provided; and
 - (h) Stowage bracket for one auger *shall* be provided. Location of bracket can be finalized at a pre-production meeting; suggested locations could be on the front boom rest.

3.12.4 **Platform** – One (1) one-man, Fiber Reinforce Plastic (FRP) bucket with integral external access steps *shall* be provided. The bucket shall be used with an insulating liner constructed from non-conductive material certified category “C” dielectric rating in accordance with CSA C225-10 or ANSI/SIA A10.31-2006. The bucket *shall*^(E):

- (a) Have a minimum of 136 kg (300 lbs) rated capacity with the liner and 158 kg (348 lbs) without the liner;
- (b) Be 24”x24”x42” as a minimum;
- (c) Have an automatic hydraulic bucket levelling system and bucket dump feature (manual or hydraulic) incorporated into the design and that *shall* maintain the dielectric integrity of the aerial device;
- (d) Have a mount to include a hydraulic bucket rotator to provide bucket rotation from the stowed position to the boom tip. Bucket *shall* rotate a minimum of 180 degrees about the boom tip;
- (e) Have safety lanyard attachment points as per CSA C225-10. Safety harnesses, fall arrests shock absorbing type lanyards will be supplied with the buckets;
- (f) Have a bucket covering system;
- (g) Have removable tool trays suitable for the bucket and liner tendered; and
- (h) 4-function wireless radio control for engine start/stop override and horn control.

3.12.5 **Pole Equipment**

- (a) **Pole Puller** – A hydraulic pole puller *shall* be provided. The minimum rated capacity *shall*^(E) be of 22680 kg (50,000 lbs) at 2000 psi. The pole puller *shall*^(E) fit into a mounting tray on the platform deck or on an outrigger and *shall* include at least 2.1 metres (7 feet) of 16 mm (5/8 inch) high tensile chain and base.

- (b) **Pole Tamper** – A hydraulic tamper at least 1.8 metres (72 inches), including quick release couplers *shall* be provided. The tamper *shall*^(E) have a kidney-shaped foot, control valve on tube, and a free flow return line.
- (c) **Pole Grabber** - A hydraulic tilting pole grabber *shall* be provided. It *shall* be mounted in such a position so as to not interfere with the operation of fibreglass extension or cause the bucket to be removed to effect operation. A pole tang interlock *shall*^(E) be provided.

3.12.6 **Front Plow** – A full width, 2-way, hydraulic front plow *shall* be provided.

3.12.7 **Brackets** - The following *shall*^(E) be provided:

- (a) Holders located on each side of the tracked vehicle used for storage of the outrigger pads; and
- (b) A spindle bar and brackets located at the rear of the cargo compartment, complete with a storage bracket for the bar. The brackets are to be mounted at a height adequate to allow the use of a 1,219 mm (48 in) diameter reel.

3.12.8 **Outriggers** –Hydraulic outrigger jacks *shall* be provided. Each outrigger *shall* be equipped with a pad of at least 457 mm by 457 mm by 50.8 mm thick (18 in by 18 in by 2 in) in a secured stowage bracket. The installation *shall*^(E) include ice cleats for each outrigger pad.

3.12.9 **Derrick Instruments and Controls** – The derrick *shall* be equipped with upper and lower controls. Controls *shall* be permanently marked to identify and show function of each control lever or switch with markings/instructions in English and French or international symbols as defined by SAE J1362. The lower control seat *shall* be mounted beside the turret. The upper controls *shall* be located on or at the working level of the bucket. Each control station *shall*^(E) be equipped with the following instruments and controls:

- (a) Lower controls:
 - i. Stop and start engine ignition switch;
 - ii. A direct reading type hydraulic hour meter with registration not less than 9,999 hours;
 - iii. Hydraulic pressure gauges to indicate operating pressures
 - iv. Main selector control for derrick, auger, and tip winch;
 - v. Pole grabber;
 - vi. Boom base control override located in the bucket to lower the fibreglass bucket in case of an emergency;
- (b) Upper controls:
 - i. Stop and start engine ignition switch;

- (c) Ground level:
 - i. Left and right outriggers;
- (d) Warning device when overloading the boom;
- (e) *Shall*^(E) be equipped with full pressure hydraulic catrack style upper controls mounted on the boom; and
- (f) *Shall*^(E) have a boom rest position warning light mounted in the cab.

3.13 Other Equipment - The tracked vehicle *shall*^(E) be equipped with the following miscellaneous equipment:

- (a) **Licence Plate** - License plate holders, front and rear with license plate lights in accordance with CMVSS 108. The license plate light *shall* be connected to the current lighting system;
- (b) **Tow Points** - Two recovery tow points mounted at the front and at the rear, hooks and mountings of sufficient strength to permit the recovery of the fully loaded tracked vehicle and for use during transport on a truck; and
- (d) **Fire Extinguisher** - A certified fire extinguisher, easily accessible, properly mounted, suitable for low temperature use, with a minimum capacity of 2.3 kg (5 lbs), located in the cab in a convenient location.

3.14 Electrical System - The tracked vehicle/equipment *shall*^(E) be supplied with a 12 volt electrical system, and *shall*^(E) include:

- (a) Maintenance free batteries with a minimum of 1800 CCA;
- (b) An alternator with a minimum output of 135 amperes and capable of supplying sufficient current to carry all electrical load requirements;
- (c) Grommets protecting electrical wiring passing through metal components;
- (d) An audible back-up alarm to alert personnel that the tracked vehicle is in reverse;
- (e) All cold weather aids *shall* be connected together with a single, cover-protected, external electrical power plug. The plug *shall* be in accordance to CSA-C22.2-Wiring Devices;
- (f) A back-up camera system which will give the driver a real-time view of the area behind the tracked vehicle. The system *shall* incorporate an in cab driver accessible screen. The system *shall*^(E) be Zone Defence model ZDM.300.1 b; and
- (g) A master disconnect switch for electrical system.

3.14.1 Emergency Aerial Device Operation – An emergency 12 volt system *shall* be provided to:

- (a) Allow an operator in the bucket to lower himself to safety if the engine or hydraulic system become inoperative; and

- (b) Retract the outriggers (if provided) if the engine or main hydraulic system becomes inoperative.

3.15 Lighting - The tracked vehicle/equipment *shall* have lights and reflectors in accordance with CMVSS. Lights *shall*^(E):

- (a) Be recessed or otherwise protected from damage with all components easily accessible for servicing;
- (b) Be LED, including all lamps and reflectors;
- (c) Include one (1) Star Warning Systems 25000 amber coloured LED beacons mounted in a suitable location to achieve maximum visibility and protection from boom rotation. Switches mounted within the cab *shall*^(E) operate the beacon light;
- (d) Include instrument panel lamps;
- (e) Include an interior cab lamp;
- (f) Installation of a trailer light package;
- (g) Include three (3) driver operated spot/flood lamps. They *shall* be mounted as follows:
 - i One at each of the upper right and left rear corners of the cab;
 - ii One mounted on the boom. Location is to be determined at the pre-production meeting;
- (h) Include a working lamp at the lower control station; and
- (i) Audible reverse lights to aid vision while reversing in low-light conditions.

3.16 Hydraulic System - A hydraulic system complete with pump, reservoir, filters, and control valves *shall* be provided. The following applies:

- (a) The system *shall* include one hydraulic fluid supply outlet and one hydraulic fluid return outlet on each of: the lower control station and upper control station;
 - i The hydraulic fluid supply outlet is desired to be Male fitting Aero-Quip 5602-12-12S, equipped with male dust cap Aero-Quip 5657-12; and
 - ii The hydraulic fluid return outlet is desired to be female fitting Aero-Quip 5601-12-12S, equipped with female dust cap Aero-Quip 5659-12.
- (b) Hydraulic Hose and Reel – Two (2) 50 ft (15.24 m) hydraulic hoses (one supply line and one return line) with two (2) quick disconnect couplings, dust caps and fittings for hydraulic tool use, *shall* be installed on a manual reel, with spring retract capability;
- (c) All hydraulic hose assemblies *shall*^(E) comply with SAE J517;
- (d) The hydraulic tandem pump *shall*^(E) deliver an appropriate flow for derrick operation, and derrick

and winch operation combined.

- (e) The hydraulic cylinders *shall*^(E) have chrome-plated piston rods;
- (f) The oil reservoir *shall* be of sufficient volume so that the oil does not overheat during normal operations. The reservoir *shall*^(E) be mounted against the front wall of the rear cargo compartment;
- (g) The supply tubes on the boom that supply hydraulic fluid to the digger and winch are desired to be telescopic with Lenz "O" Ring tube fittings or high pressure "U" cup seal and wiper. The telescopic tubes *shall*^(E) be protected from damage by telescopic steel covers, which *shall*^(E) be removed easily to allow inspection or servicing of the hydraulic system;
- (h) Gate valves in the suction and return lines to the hydraulic pump *shall*^(E) be installed to prevent loss of oil from the system when serving the filters and pump;
- (i) The suction line from the reservoir *shall*^(E) be fitted with a 60 mesh reusable strainer with a 3 psi bypass valve. The return line filter *shall*^(E) be fitted with a 10-25 micron paper element filter with a 15 psi bypass valve. The filter *shall*^(E) have a flow rate of a least 205 lpm (45 gpm). All filters *shall* be readily accessible for servicing; and
- (j) A test fitting *shall*^(E) be located at the outlet of the pump so that a pressure meter may be installed to check the system if required.

3.17 Lubricants and Hydraulic Fluids - The tracked vehicle *shall* be serviced with manufacturer's standard lubricants and hydraulic fluids compatible with delivery location and season.

3.17.1 Auto-lubrication System - Auto-lubrication system servicing the maximum number of grease points *shall* be provided on the tracked vehicle. The grease reservoir *shall* be full when vehicle is delivered.

3.18 Paint - The following paint procedure *shall*^(E) be followed for the vehicle including the cab chassis and variant systems, as applicable:

- (a) **Manufacturer's Painting Method** - Paint applied in accordance with the paint manufacturer's recommendations and the manufacturer's best production procedures, rendering a durable finish and a smooth appearance, free from runs, sags and orange peel; and
- (b) **Phosphate Treatment** - A phosphate treatment plus primer or an E-coat system on all ferrous metals, followed by a minimum of one coat of paint and a clear coat.

3.18.1 Paint Colour – The vehicle *shall* be painted white. The chassis components may be painted the manufacturer's standard colour.

3.19 Corrosion Protection System - The following *shall* be provided for the tracked vehicle:

- (a) **Rust Proofing** - Aftermarket rust proofing provided in addition to standard factory rust proofing. The treatment will normally be applied within the first year of service. The treatment date will be directed by the Technical Authority to optimize seasonal rust prevention benefits;

- (b) **Rust Preventive** - Metal surfaces treated with a rust preventive oily film product having the following properties;
 - i Moisture displacing;
 - ii Creeping (capillary action);
 - iii Low solvent content;
 - iv Compatibility with rubbers, plastics, and all other materials used in automotive construction;
 - v Non toxic; and
 - vi Minimal dripping.
- (c) **Salt Spray Endurance Test** - Written proof of a twelve hour ASTM B117 salt spray endurance test certification by an independent test laboratory. Krown Rust Kontrol and Rust Check products have been previously certified, proof not required;
- (d) **Application Areas** - The application includes, but is not limited to the underside of fenders and hood, enclosed and boxed-in sections, seams, mouldings, crevices, weld points, underbody, and exposed exterior brackets;
- (e) **Warranty Documentation** - A decal and warranty papers accompanying each tracked vehicle; and
- (f) **Availability** - Corrosion protection system widely available across Canada or available through mobile services.

Note: The following corrosion protection system is provided as guidance: Krown Rust Kontrol or Rust Check products.

3.19.1 Corrosion Resistant Materials - The tracked vehicle/equipment *shall*^(E):

- (a) **Rivets** - Be provided with stainless steel, zinc plated or hot dipped galvanized aluminium rivets, and plastic black oxide brass fasteners; and
- (b) **Corrosion Protection Design** - Be designed to prevent galvanic corrosion.

3.20 Warning, Markings and Instruction Plates - International symbols and/or bilingual markings *shall* be provided for all identification, instructional, and warning labels. The following items *shall* be provided:

- (a) Be bilingual and within easy view of the operator and/or make use of graphic symbols, as much as possible, as defined in SAE J1362;
- (b) Engraved metal plates labelling all gauges and controls and *shall* be attached with rivets wherever possible.

- (c) Detailed, bilingual operating instruction plates for all operations, including, but not limited to:
 - i Remote on/off start controls;
 - ii Engine starting and shut-down, in the cab within easy view for the driver;
 - iii Hydrostatic drive system operation, in the cab within easy view for the driver;
 - iv PTO operation, in the cab within easy view for the driver;
 - v Operation of the winch;
 - vi Operation of the hydraulic controls; and
 - vii Hydraulic Derrick capacity chart.

3.20.1 **Vehicle identification** - The following information placards *shall*^(E) be permanently and clearly marked, bilingual and installed in a conspicuous and protected location:

- (a) The cab and frame manufacturer's name, model number, serial number, and model year;
- (b) The body manufacturer's model and serial number;
- (c) The digger derricks manufacturer's model and serial number; and
- (d) The GVWR rating.

3.20.2 **Rear Markings** - A diagonal, black and white striped, warning pattern *shall* be formed on the rear face of the platform extension, the back of the left side of the line body, and the rear face of the derrick main frame. Gloss black paint and white reflective tape *shall* be used to form stripes 76 mm (3 in) wide.

4. INTEGRATED LOGISTICS SUPPORT

4.1 Manuals

- (a) All manuals required for the description, operation, maintenance and repair of the complete equipment, including sub-systems, *shall* be provided. As a minimum, the manuals *shall* consist of a bilingual Operator's manual, and bilingual Maintenance manual and an English Parts manual. Bilingual Parts manuals are desirable. The content of the manuals *shall* be as described in Section 2 of C-01-100-100/AG-005 Acceptance of Commercial and Foreign Government Publications as Adopted Publications.
- (b) The contractor *shall* submit sample manuals to the Technical Authority (TA) for each equipment model and or sub-system for approval as described in Section 2 of C-01-100/AG-005 Acceptance of Commercial and Foreign Government Publications as Adopted Publications, not later than 30 days after acceptance by DND of the first production article.

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- (c) Manuals *shall* be delivered as follows:
 - i. Qty 1 Operator's manual (paper format) *shall* be provided with each vehicle or piece of equipment;
 - ii. Qty 1 complete set of manuals (Operator's, Maintenance and Parts) *shall* accompany the first vehicle or equipment shipped to each unit(s). The manuals *shall* be in paper and electronic format;
 - iii. Qty 1 complete set of manuals (Operator's, Maintenance and Parts) in electronic format *shall* be delivered to the Technical Authority no later than 30 days after acceptance of the sample manuals.
- (d) In the event that approved manuals are not available at the time of delivery of the equipment, manuals marked "Provisional" *shall* be supplied with the equipment. The contractor *shall* deliver replacement approved manuals to all destinations where Provisional manuals were delivered.
- (e) The contractor *shall* supply manual supplements (Operator's, Maintenance and Parts) to support dealer-installed equipment not covered in approved manuals. These supplements *shall* require separate DND approval. These supplements *shall* be provided to each destination in the same quantities and format as the approved manuals.
- (f) Changes to manuals:
 - i. During the period of the Contract, changes to equipment, which affects the contents of manuals, *shall* be conveyed to DND for the revision of the electronic and paper version of the manuals.
 - ii. Changes to the manuals *shall* conform to the same format and presentation requirements as the original manuals.
 - iii. The revised electronic version of the manual *shall* be sent to the Technical Authority by the Contractor.
- (g) Approved copies of the electronic format manuals *shall* be delivered on CD/DVD-ROM as per Para 3. CD/DVD-ROM *shall not* require installation, password and/or Internet connection to be accessed and *shall* be an unlocked PDF in a searchable format.

4.2 Data Summary

- (a) The contractor *shall* provide a bilingual Data Summary for each make/model/configuration of equipment as described in D-01-100-200/SF-002. A representative sample template of a Data Summary, Equipment Configuration Code (ECC) and the publication number will be provided to the Contractor by the Technical Authority.
 - i. The Data Summary *shall* provide details of all attachments and options.

- ii. The Contractor ***shall*** submit a draft of the Data Summary to the Technical Authority for review and acceptance in electronic format (MS Word) within 30 days after contract award.

4.3 Warning Sign and Identification Label - The contractor ***shall*** deliver the equipment with bilingual warning signs and identification labels. Bilingual labels and signs ***shall*** also be represented in the parts manual.

4.4 Warranty Letter

- (a) The contractor ***shall*** provide a bilingual Warranty Letter with each vehicle delivered in the approved DND format and include the following details:
 - i. A list of all Canadian designated warranty service providers that will honor the warranty for the equipment and attachments (if applicable) procured under this contract. This list ***shall*** include the contact person and phone number at each warranty service provider.
 - ii. Additional warranty coverage of sub-systems and a copy of the bilingual warranty letter from each sub-system's Original Equipment Manufacturer (OEM).
 - iii. Warranty period as negotiated in the contract.
 - iv. Contractor contact information, name and phone number, for warranty support.
- (b) The TA will provide the contractor a template for the DND acceptable format of the warranty letter.

4.5 Photographs

- (a) Photographs ***shall*** be submitted in electronic format.
- (b) The contractor ***shall*** provide photographs within 15 days of delivery of the first vehicle or equipment of each make/model/ configuration. The color photographs ***shall*** be taken against a plain background, in digital Joint Photographic Experts Group (JPEG) format with a minimum 10 megapixel resolution. The photographs ***shall*** be as follow:
 - i. A left front three-quarter views of a completed unit;
 - ii. A right rear three-quarter views of a completed unit, and;
 - iii. A side and front view sketch showing the dimensions ***shall*** be provided. Brochure sketches are acceptable.

4.6 Special Tools List

- (a) The contractor ***shall*** provide an itemized list of specific special tools required for the servicing and repair of the vehicle or equipment procured under this contract. The list ***shall*** include the following information.
 - i. Item name;

- ii. Manufacturer's part number (OEM);
 - iii. Quantity recommended per delivery location;
 - iv. Contractor's part number;
 - v. Unit price; and
 - vi. Unit of issue.
- (b) These tools **shall** also be listed in the Maintenance manual as described in Section 2 Para 4 of C-01-100/AG-005 Acceptance of Commercial and Foreign Government Publications as Adopted Publications.

4.7 Operator Training

- (a) The Contractor **shall** deliver an operator training session dealing with the specific features and capabilities of the equipment. The training **shall** cover, as a minimum, the operator servicing procedures, how to operate the features of the vehicle safely and efficiently and deliver a minimum of one (1) hours of individual practical operating training per operator.
- (b) The training **shall** be a minimum of seven (7) hours total of operator training for a maximum of six (6) persons at a customer location where the equipment is delivered. Training **shall** be available in both official languages. Training dates **shall** be coordinated with the TA.
- (c) The contractor **shall** provide a copy of the training package to the TA for review and approval at least 30 days before training begins.
- (d) The contractor **shall** deliver the “**PROOF OF OPERATOR TRAINING**” certificate for signature by a Crown Representative from the location where the training is taking place and return the signed document to the TA. The Technical Authority will supply a template of the document in electronic format to the contractor.

4.8 Maintenance Personnel Training

- (a) The Contractor **shall** provide training session to the maintenance personnel. The training **shall** cover, as minimum, the safety precautions, trouble shooting, test and adjustment, special tools and test equipment, minimum operation and features of the vehicle and the safe and efficient maintenance of the vehicle.
- (b) The training provided to the maintenance personnel **shall** be a minimum of fourteen (14) hours of training for a maximum of six (6) persons at a customer location where the equipment is delivered. The training **shall** be available in both official languages. Training dates **shall** be coordinated with the TA.

- (c) The contractor *shall* provide a copy of the training package to the TA for review and approval at least 30 days before training begins.
- (d) The contractor *shall* deliver the “**PROOF OF MAINTENANCE TRAINING**” certificate for signature by a Crown Representative from the location where the training is taking place and return the signed document to the TA. The Technical Authority will supply a template of the document in electronic format to the contractor.

4.9 Equipment Technical Information - The contractor *shall* provide the model number or specific part number for each variant of equipment provided under this contract. Variant model numbers or part number *shall* be provided if the capability of the equipment is modified. For example, the model number for militarized equipment *shall* be different to the commercial variant. This model number *shall* be used for all documentation provided. Supporting documentation *shall* be provided with the bid.

4.10 Line Setting Ticket – One copy of the chassis manufacturer’s Line Setting Ticket, or equivalent, describing the components provided on the cab and chassis *shall* be provided to the Technical Authority. One copy *shall* accompany the vehicle to the final delivery point.

4.11 Certification – The Contractor *shall* provide the following certification:

- (a) Written manufacturers certification, by a Professional Engineer that the mounted unit meets or exceeds CSA Standard C225-10 for structural and stability requirements, ANSI/ASSE A10.31-2006 for dielectric requirements, and OHSA to be included with each completed tracked vehicle and a copy sent to the TA.
- (b) Engineering certification of the frame suitability for this application upon request.
- (c) The completed tracked vehicle *shall* have Safety Compliance Certification Label with a **National Safety Mark (NSM)** in accordance with the Canada Motor Vehicle Safety Act; and
- (d) Written proof of a twelve hour ASTM B117 salt spray endurance test certification by an independent test laboratory if required. Krown Rust Kontrol and Rust Check products have been previously certified, proof not required (reference back to 3.19c).

4.12 Testing - The following testing *shall* be performed on the tracked vehicle:

- (a) All testing required meeting the C225-10 and ANSI/ASSE A10.31-2006 certifications for dielectrical rating, stability, and structure;
- (b) **Performance and Verification Testing** - The first tracked vehicle to be delivered *shall* be examined and performance tested by the Contractor, under real or equivalent load and operating conditions, to ensure item by item conformance to specified requirements. The QAR and/or the Technical Authority may witness this testing and operate the unit sufficiently to assess the handling characteristics. The Contractor *shall* have a fully equipped tracked vehicle weighed on certified scales.
- (c) **Remaining Vehicle Testing** - The remaining tracked vehicles *shall* be tested by the Contractor, with or without load, to check general performance and operation.

