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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

This amendment 002 is raised to extend the closing date.

Vendor/Firm Name and Address

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Vehicles & Industrial Products Division
140 O'Connor, Tower East
4th Floor
140 O'Connor, Tour Est
4ème étage
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Ontario
K1A 0S5

Title - Sujet Overcenter Line truck	
Solicitation No. - N° de l'invitation W8476-206185/A	Amendment No. - N° modif. 003
Client Reference No. - N° de référence du client W8476-206185	Date 2019-09-26
GETS Reference No. - N° de référence de SEAG PW-\$\$HP-929-77570	
File No. - N° de dossier hp929.W8476-206185	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-10-07	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
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Signature	Date

This amendment 003 is raised to answer bidder questions and provide an updated Purchase Description as follows:

All other terms and conditions remain the same

QUESTION 1

1. Item 3.15 f) v. drawers with lock in/out latches (there is no mention of drawers other than this. Are they required, and if so where?)

RESPONSE 1

Remove clause 3.15 f) and replace with

- v. Cabinet doors that are locking and keyed alike;

QUESTION 2

2. Item 3.16.1 e) Two end mounted one-man fiberglass platforms (if there are two platforms, they must be side mounted)

RESPONSE 2

Remove clause 3.16.1 e) and replace it with;

- e) The aerial platform must be equipped with one side mounted two-person fiberglass bucket.

QUESTION 3

3. Item 3.16.6 a) One one-man fiber-reinforced plastic bucket (this contradicts Item 3.16.1 e) above)

RESPONSE 3

Remove clause 3.16.6. a) and 3.16.6 c) and replace it with;

- a) One two man side mounted fiber-reinforced bucket with integral external access steps must be provided.
- c) The platform must have a minimum rated payload capacity of 227 kilograms (500 pounds).

QUESTION 4

- 4. Item 3.16.7 c) jib minimum bare drum rating of 1000 lbs

RESPONSE 4

3.16.7 c) remains unchanged.

QUESTION 5

- 5. Item 3.16.7 f) jib minimum lift capacity of 1900 lbs @ 0 degrees and all booms extended? This would be impossible and contradicts your bare drum rating. This is normally rated with lower boom at 90 degrees and upper boom at 0 degrees. With that, you would not have the full rated capacity of the jib in this configuration. (I have attached an example of a jib chart)

RESPONSE 5

Remove clause 3.16.7. f)

QUESTION 6

- 6. Remove clause 3.16.8 c) and replace with:

- c) Replace with: The hydraulic winch **must** have a minimum top layer capacity of 9071 kilograms (20 000 pounds).



ANNEX B

PURCHASE DESCRIPTION FOR

Overcenter Line Truck - 18m Platform

Version 3

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.

OPI DSVPM 5 – DAVPS 5

Issued on Authority of the Chief of the Defence Staff

Publiée avec l'autorisation du chef d'état-major de la Défense

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Canada



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1. SCOPE

1.1 Scope

- a) This document describes a 4x4 service platform truck, telescopic articulating, overcentre and hydraulically powered aerial device.

1.2 Instructions

- a) Requirements, which are identified by the word “must”, are mandatory. Deviations will not be permitted.
- b) Requirements identified with a “will” define actions to be performed by Canada and require no action/obligation on the Contractor’s part.
- c) Where “**must**” or “will” are not used, the information supplied is for guidance only.
- d) In this document “provided” **must** mean “provided and installed”.
- e) Where a technical certification is referred to in this specification, a copy of the certification or an acceptable Proof of Compliance **must** be supplied for the vehicle when requested by the Technical Authority.
- f) Metric measurements are used to define the requirement. Other measurements are for reference only and may not be exact conversions.
- g) Nominal dimensions reflect a method by which materials or products are generally identified, but which differ from the actual measured dimensions.

1.3 Definitions

- a) “**Technical Authority**” - The government official responsible for technical content of this requirement.
- b) “**Equivalent**” - Substitutes and alternatives that are equivalent in product, performance or a standard will be considered for acceptance by the Technical Authority where Proof of Compliance for equivalency for the respective requirement is provided for evaluation.
- c) “**Vehicle**” – The entire vehicle/trailer including all systems and sub-systems, in a complete manufactured state in accordance with the requirements in this Purchase Description.
- d) “**Road Legal**” – Applies to a self-propelled vehicle designed for the transportation of persons, property, material or permanently or temporarily affixed apparatus on a highway.
- e) “**5th percentile adult female**” – As defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)* a person having as physical characteristics a mass of 46.3 kilograms, height of 1499 millimetres, erect sitting height of 785 millimetres, normal sitting height of 752 millimetres, hip sitting breadth of 325 millimetres, hip sitting circumference of 925 millimetres, waist sitting circumference of 599 millimetres, chest depth of 191 millimetres, bust circumference of 775 millimetres, chest upper circumference of 757 millimetres, chest lower circumference of 676 millimetres, knee height of 455 millimetres, popliteal height of 356 millimetres, elbow rest height of 180 millimetres, thigh clearance height of 104 millimetres, buttock-to-knee length of 518 millimetres, buttock-to-poples length of 432 millimetres, elbow-to-elbow breadth of 312 millimetres and seat breadth of 312 millimetres.
- f) “**95th percentile adult male**” – As defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)* a person having as physical characteristics a mass of 97.5 kilograms, height of 1849 millimetres, erect sitting height of 965 millimetres, normal sitting height of 930 millimetres, hip sitting breadth of 419 millimetres, hip sitting circumference of 1199 millimetres, waist sitting circumference of 1080 millimetres, chest depth of 267 millimetres, chest circumference of 1130 millimetres, knee height of 594 millimetres,

popliteal height of 490 millimetres, elbow rest height of 295 millimetres, thigh clearance height of 175 millimetres, buttock-to-knee length of 640 millimetres, buttock-to-poples length of 549 millimetres, elbow-to-elbow breadth of 506 millimetres and seat breadth of 404 millimetres.

- g) **“Gross Axle Weight Rating (GAWR)”** - The value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-ground interfaces.
- h) **“Gross Vehicle Weight Rating (GVWR)”** - The value specified by the vehicle manufacturer as the loaded weight of a single vehicle.

2. APPLICABLE DOCUMENTS

2.1 Applicable Documents

- a) The following documents form part of this Purchase Description. The dates of issue are those in effect on the date of release of the RFP. Canada will not be supplying these documents. Sources are as shown:

Canadian Occupational Health and Safety Regulations (COHSR)

CAN/CGSB Standard 3.517 Automotive (On-road) Diesel Fuel

Motor Vehicle Safety Regulations (MVSr)

Canadian Motor Vehicle Safety Standards (CMVSS)

Yearbook Tire and Rim Association Inc.

R.S.C., 1985, c. H-3 Hazardous Products Act

ANSI /SIA A92.2 Vehicle-Mounted Elevating and Rotating Aerial Devices

ANSI /SIA A10.31 Safety Requirements, Definitions and Specifications for Digger Derricks

CAN/CSA C225 Vehicle Mounted Aerial Devices

CSA W47.1 Certification of Companies for Fusion Welding Steels

CSA W59 Welded Steel Construction (Metal Arc Welding)

CSA W59.2 Welded Aluminum Construction

3. REQUIREMENTS

3.1 Standard Design

- a) **Latest Model** - The vehicle design **must** be the manufacturer's latest model.
- b) **Industry Acceptability** - The vehicle design **must** have demonstrated industry acceptability by having been manufactured and sold commercially for at least two years, or be manufactured by a company that has at least five years' experience in design and manufacturing of a comparable type of equipment of equivalent or greater complexity.
- c) **Engineering Certification** - Original manufacturers engineering certification **must** be provided upon request for major drive train components, and major equipment systems and assemblies, to demonstrate that assemblies are used within their design limitations.
- d) **Regulations** – The vehicle **must** 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. International equivalent laws, regulations, and industrial standards will be accepted only if certified for equivalency by a professional engineer.
- e) **Published Ratings** - The vehicle **must** have system and component capacities equivalent to published ratings (i.e. product or component brochures).
- f) **Standard Components** - The vehicle **must** include all standard components, equipment and accessories for the model offered, although they may not be specifically described in this Purchase Description.
- g) **Spare Parts** - The manufacturer **must** select components readily available for a minimum period of ten years from the date of manufacture.
- h) **Hazardous Materials** - The contractor **must** comply with Hazardous Products Act of Canada concerning the use of hazardous materials, ozone depleting substances, polychlorinated biphenyls, asbestos and heavy metals used in the manufacture and assembly of the product supplied.
- i) **Measurements** – Values for labels and indicators provided with equipment **must** be presented in metric units, or **must** have both imperial and metric units with metric dominant.

3.2 Operating Conditions

3.2.1 Weather

- a) The vehicle **must** operate under the extremes of weather conditions found in Canada in temperatures ranging from -40 to 37 degrees Celsius C (-40 to 99 degrees Fahrenheit).

3.2.2 Terrain

- a) The vehicle **must** operate on highways, secondary roads, gravel roads, and limited off-road including construction sites, open fields and dirt tracks.

3.3 Safety Standards

3.3.1 Vehicle Safety Regulations

- a) The vehicle **must** comply with the Motor Vehicle Safety Regulations (MVSr).
- b) The completed vehicle **must** have Safety Compliance Certification Label with a National Safety Mark (NSM), as a seal of compliance **or** be accompanied by a Vehicle Import Form containing proof of Inspection by the Registrar of Imported Vehicles.
- c) The vehicle **must** be designed and built in accordance with the latest version of ANSI /SIA A92.2, ANSI/SIA A10.31 and CSA C225.

3.3.2 Human Factors Engineering

- a) The vehicle, all systems, and components **must** comply with the relevant sections of the COHSR.
- b) The vehicle **must** be manufactured/assembled for safety and ease of use by CAF users with anthropometric characteristic measurements ranging from 95th percentile male to 5th percentile female;
- c) The vehicle **must** have entry and exit points equipped with handles and steps sized and positioned to accommodate CAF users with anthropometric characteristic measurements ranging from 95th percentile male to 5th percentile female;
- d) The vehicle **must** be equipped, with warning and instruction plates, non-slip walking surfaces and heat shields, for operator safety; and

3.4 Vehicle Performance, Ratings and Dimensions

3.4.1 Performance

- a) The vehicle, at GVWR, **must** sustain a minimum top speed of 110 kilometers per hour (65 miles per hour) on a level paved road.
- b) The vehicle **must** have both an angle of approach and an angle of departure of at least 8 degrees.

3.4.2 Weight Ratings

- a) The GVWR of the vehicle **must** not be less than the sum of the unloaded vehicle mass, the cargo carrying capacity, and the product obtained by multiplying the designated seating capacity by 68kg as defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)*.
- b) Each GAWR **must** be equal to or less than the load rating of the weakest component in the axle system, i.e., axle housing, suspension, wheels, or tires.
- c) The total load on each axle of the vehicle/trailer **must** not exceed the GAWR for that axle.
- d) Axle loads **must** comply with all the provincial weight restrictions across Canada.

3.4.3 Dimensions

- a) The vehicle **must** have road legal dimensions across Canada;
- b) The vehicle minimum ground clearance **must** be 300 millimetres (12 inches).

3.5 Frame

- a) The frame **must** be manufactured for use in all conditions specified in Paragraphs 3.2, 3.3 and 3.4.

3.6 Outriggers/Torsion Bar

- a) Stabilizers and outriggers **must** be provided in accordance with safety requirements in ANSI/SAIA A92.2 or CSA 225.

3.7 Engine Requirements

3.7.1 Engine Components

- a) The engine **must** operate on ultra-low sulphur diesel fuel to the CAN/CGSB Standard 3.517.
- b) Replaceable air filters **must** be provided.

- c) A combustion air cleaning system **must** be provided, with an air cleaner restriction indicator visible to the operator.
- d) A full flow replaceable oil filter **must** be installed.
- e) An engine shutdown or de-rate system **must** be provided, including a visual warning indicator visible from the operator position.

3.7.2 Cold Weather Starting Aids

- a) A low temperature engine starting aid **must** be provided.
- b) A thermostatically controlled in-line fuel heater **must** be provided.
- c) A 110 Volt battery heater(s) **must** be provided.
- d) The battery **must** be housed in an insulated battery box, blanket or heated cab.

3.7.3 Exhaust System

- a) The vehicle **must** be equipped with a vertical exhaust system shielded to prevent personnel contacting a heated surface.
- b) The exhaust system **must** prevent entry of rain.

3.7.4 Fuel Tank(s)

- a) The fuel tank(s) **must** have a fuel capacity that will provide the greater of: at least 500 km of fully laden cruise or ten continuous hours of operations.
- b) If more than one fuel tank is used, separate fuel gauges **must** be provided.

3.8 Power Train

- a) The vehicle **must** be 4x4 drive.
- b) The power train **must** include a "Park" or "Neutral" starting interlock.
- c) The power train **must** include limited slip or driver controlled locking differential(s) on the drive axle(s).

3.9 Transmission

- a) The vehicle **must** be equipped with mechanical, automatic or hydrostatic continuous drive transmission.
- b) The transmission **must** have an oil cooler.
- c) The transmission shift control **must** clearly indicate the transmission selection status under all lighting conditions.
- d) A transmission oil dipstick or any other means to determine oil level **must** be provided.
- e) An audible back-up alarm **must** be installed to alert personnel that the vehicle transmission is in reverse.

3.10 Braking Requirements

3.10.1 Brakes

- a) The vehicle **must** be equipped with a hydraulic or air braking system, including a parking brake.
- b) The braking system **must** include an anti-lock (ABS) brake system.

3.10.2 Brake Interlock

- a) A brake interlock **must** be provided to prevent the vehicle from being moved in accordance with ANSI 92.2 section 4.5.5.
- b) A brake interlock **must** be provided to prevent the vehicle from being moved when the outriggers or stabilizers are activated.

3.11 Suspension System

- a) The vehicle **must** be equipped with a heavy-duty on/off highway suspension system designed to operate under the conditions listed in sections 3.2.1, and 3.2.2

3.12 Steering

- a) The vehicle **must** be provided with a front wheel power steering system.
- b) The steering system **must** be provided with a telescopic/tilt steering column.

3.13 Wheels, Rims and Tires

- a) Tires and rims **must** be selected in accordance with MVSR Technical Standards Documents No. 120, Revision 1R.
- b) Tires **must** have a tread pattern for use in the operating conditions described in Paragraph 3.2.
- c) The wheels, tires and rims **must** include valve extensions for inner tires, if used, to allow for easy access;
- d) One full size spare tire assembly **must** be delivered and installed with each vehicle.
- e) Spare tire must have a dedicated stowage area which secures the tire during transport

3.14 Cab

- a) The vehicle **must** be equipped with a two-person weatherproof cab.
- b) A fully adjustable driver's and passenger seat **must** be provided, with suspension and arm rests.
- c) A minimum of two doors **must** be provided with power locks, be keyed alike.
- d) A ventilation/heater and defrosting system **must** be provided, with a multi-speed fan, applicable for the operating conditions as specified in Paragraph 3.2.1.
- e) An air conditioning system **must** be provided equipped with all components and controls required for regulation of the cab interior temperature.
- f) A powered windshield washer system **must** be provided with multi-speed wipers, where the wiper blades **do not** travel from a vertical centre windshield position to a horizontal position near the roof line.
- g) The cab floor or floor mats **must** be weatherproof.
- h) Two rotating interior sun visors **must** be installed.
- i) A back-up camera system **must** be installed in the cab with a screen size of at least 170 millimetres (7 inches).
- j) The back-up camera screen **must** be an in console style mount.
- k) An AM/FM stereo radio with an auxiliary port **must** be provided.
- l) Two heavy-duty, powered and heated exterior side mirrors, with convex section, **must** be provided with in-cab controls.

3.15 Storage Cabinets

- a) The vehicle **must** be equipped with fiberglass storage cabinets.
- b) The vehicle **must** be equipped with a minimum of eight side vertical compartments, four per side, with the following minimum dimensions:
 - i. Height – 1 100 millimetres (42 inches)
 - ii. Width – 680 millimetres (27 inches)
 - iii. Depth – 380 millimetres (15 inches).
- c) The vehicle **must** be equipped with a minimum of two horizontal compartments, one per side, with the following minimum dimensions:
 - i. Height – 610 millimetres (20 inches)
 - ii. Width – 1 250 millimetres (50 inches)
 - iii. Depth – 380 millimetres (15 inches).
- d) The vehicle must be equipped with one Ladder storage compartment located above the driver side cabinets.
- e) The storage compartments **must** be weatherproof to prevent the ingress of water.
- f) All compartments **must** be equipped with:
 - i. Stainless steel or cadmium plated hinges, pins, and hardware;
 - ii. Mechanism designed to hold the horizontal compartment doors open at a minimum of 110 degrees;
 - iii. Mechanism designed to hold the vertical compartment doors open at a minimum of 110 degrees;
 - iv. Shelves/bottom lined with non-slip safety matting to prevent shifting of tools while in motion;
 - v. Cabinet doors that are locking and keyed alike;
 - vi. Removable shelves with a minimum of 45 kilograms (100 pounds) load capacity;
 - vii. Maximum load capacity for all drawers and shelves clearly marked on the inside of the compartment doors; and
 - viii. Perimeter door seals installed on the doors or doorframes.
- g) The vehicle **must** have a removable vice holder complete with a 150 millimetre (6 inch) vice mounted on rear deck.
- h) All cabinets must have led strip lightning such as Grote 61G01 or equivalent

3.16 Equipment Requirements

3.16.1 Aerial Device

- a) The vehicle **must** be equipped with an aerial device.
- b) The aerial device **must** be an articulated over-center design.
- c) The aerial device **must** be certified category “C” according to ANSI /SIA A92.2 standard.
- d) The aerial device **must** have a minimum platform height of 18 meters (60 feet), measured from the ground to the bottom of the platform;
- e) The aerial platform must be equipped with one side mounted two-person fiberglass bucket.

- f) The aerial platform **must** be equipped with a lower boom lift eye with a minimum lifting capacity of 315 kilograms (694 pounds).
- g) The aerial platform **must** have a minimum 350 degree rotation about the vertical axis.
 - i. If continuous 360 degree rotation is supplied, a worm gear complete with side load protection to protect against rotation damage **must** be provided.
 - ii. If non-continuous is used, the rotation stop **must** be at forward centre of turret to allow free rotation at rear of vehicle.

3.16.2 Aerial Device Load Alert System

- a) The aerial device **must** be equipped with a load alert system.
- b) The load alert system **must** alert the operator of overload if the aerial device is loaded beyond its operational limits.

3.16.3 Aerial Device Controls

- a) Upper (in or beside the platform) and lower controls (at the rear of the vehicle) **must** be set.
- b) Upper controls **must** be one hand, one-lever, pistol grip type controls.
- c) Upper and lower controls **must** include:
 - i. Two-speed throttle control; and
 - ii. A bucket dump feature, manual or hydraulic.

3.16.4 Emergency Aerial Device Operation

- a) An emergency 12 Volt system **must** be provided to:
 - i. Allow an operator in the bucket to lower himself to safety if the engine or hydraulic system become inoperative; and
 - ii. Retract the outriggers (if provided) if the engine or main hydraulic system becomes inoperative.

3.16.5 Batteries

- a) The vehicle **must** be supplied with heavy-duty, maintenance free batteries, compliant with ULC-S515 Chapter 12.
- b) Batteries **must** be mounted in an accessible, protected and ventilated location.
- c) The batteries **must** be rated to exceed the draw, in the required operating conditions.

3.16.6 Platform

- a) One two-man, fibre-reinforced bucket with integral external access steps **must** be provided.
- b) The platform **must** be equipped with an insulating liner constructed from non-conductive material certified category "C" (46 kV and below).
- c) The platform **must** have a minimum rated payload capacity of 227 kilograms (500 pounds).
- d) The platform **must** have an automatic hydraulic bucket levelling system.
- e) The platform **must** have a mount to include a hydraulic bucket rotator to provide bucket rotation from the stowed position to the boom tip.
- f) The bucket **must** rotate a minimum of 90 degrees about the boom tip.
- g) The platform **must** have anchorage for fall protection.

- h) The platform **must** have a bucket covering system.
- i) The platform **must** have removable tool trays suitable for the bucket and liner provided.

3.16.7 Jib

- a) A hydraulic extending jib **must** be provided.
- b) The jib **must** be equipped with a jib winch.
- c) The minimum bare drum rated jib winch capacity **must** be at least 454 kilograms (1000 pounds).
- d) The jib winch **must** be equipped with a minimum 21 meter (70 feet) nylon rope.
- e) The jib winch cable **must** be supplied with a mechanical spliced eye at the end.

3.16.8 Front Winch

- a) A hydraulic front winch shall be provided. It **must** be mounted behind an extended front bumper.
- b) The front winch **must** be mounted behind an extended front bumper.
- c) hydraulic winch **must** have a minimum top layer capacity of 9071 kilograms (20 000 pounds).
- d) The front winch **must** include a 76 meter (250 feet) long cable.
- e) The front winch cable **must** be supplied with a mechanical spliced eye at the end, of equal or greater strength than the cable.
- f) The front winch **must** include an automatic drag and safety brake, a hydraulic overload device, a free spooling feature, a 900 millimeter (3 feet) leader chain with hook and a roller fairlead.
- g) The front winch **must** operate using a wireless remote control unit, powered in both directions.
- h) The front winch **must** include a snatch block rated to withstand a double line pull capacity of the winch.
- i) The front winch **must** be equipped with cable guide roller system assembly.
- j) The front winch **must** have controls located in the cab.

3.16.9 Rear Winch:

- a) A hydraulic rear winch **must** be provided.
- b) The hydraulic rear winch **must**:
 - i. Be a 450 millimetre (18 inch) drum;
 - ii. Have a minimum rated capacity of 9 072 kilograms (20 000 pounds) on the first layer of cable;
 - iii. Be equipped with a limiting device to restrict the line pull capacity to 9 072 kilograms (20 000 pounds);
 - iv. Be equipped with a drum with a 107 metre (350 feet) long cable.
 - v. Have an automatic safety brake and a drag brake;
 - vi. Be power operated in both directions;
 - vii. Have a free drum in neutral position;
 - viii. Have power controls mounted on the derrick control panel;
 - ix. Have a swivel pulley installed at the rear of the body to accommodate 12 millimetre (1/2 inch) cable; and
 - x. Have controls located in the cab.
- c) The rear winch cable **must** be supplied with a mechanical spliced eye at the end, of equal or greater strength than the cable.

3.17 Miscellaneous Equipment

- a) Two safety harnesses and fall arrest shock absorbing type lanyards **must** be provided.
- b) Two sets of two tow hooks **must** be provided one at the front and one rear of the truck.
- c) Safety triangles **must** be provided.
- d) First aid kit **must** be provided.
- e) Two stone deflectors **must** be incorporated under the rear wheel wells.
- f) One certified fire extinguisher with a minimum capacity of 2.3 kilograms (5 pound), mounted firmly in place under all operating conditions, with quick release type latching for accessibility and suitable for low temperature use **must** be provided.

3.18 Towing

- a) The vehicle **must** have a minimum towing capacity of 11 340 kg (25 000 lbs).
- b) The vehicle **must** be equipped with a rear pintle hook complete with appropriate chassis frame reinforcement.
- c) The vehicle **must** be equipped with two safety chain towing shackles located on either side of the pintle hook.
- d) A 7-pin electrical trailer socket **must** be provided in accordance with SAE J560.

3.19 Accessories

- a) Front licence plate holder **must** be provided.
- b) Rear licence plate holder with LED light **must** be provided.
- c) Towing hooks **must** be provided at the front and rear of the vehicle rated to tow a vehicle of equivalent GVWR.

- d) Mud flaps or equivalent **must** be provided.

3.20 Hydraulic System

- a) A hydraulic oil cooler **must** be provided.
- b) Hydraulic filter change indicators **must** be provided.
- c) Hydraulic hoses should be grouped together and **must** be clearly identified.
- d) Clearly marked test ports **must** be provided.
- e) Hydraulic overload protection system must be provided.

3.20.2 Lubricants and Fluids

- a) All lubricants and fluids provided **must** meet the operating conditions specified in Paragraph 3.2.1.

3.21 Electrical System

- a) The vehicle **must** be equipped with a 12 Volt electrical system
- b) Wiring **must** be protected by insulating grommets, where passing through metal.
- c) A master disconnect switch, accessible from the ground, **must** be provided.
- d) An alternator **must** be provided.
- e) Three 120 Volt, 60 Hertz power outlets **must** be provided with protective covers and positioned at:
 - i. One flush mounted at the rear of the vehicle.
 - ii. One flush mounted behind the cab at the curb side of the vehicle.
 - iii. One on the vehicle storage cabinet or equivalent in proximity of the vice.

3.22 Lighting

- a) The vehicle **must** be equipped with LED lights, where possible.
- b) Lights **must** be recessed or otherwise protected from damage with all components accessible for servicing.
- c) One amber coloured beacon light mounted on the cab roof.
- d) In-cab instrument panel lights **must** be dimmable.
- e) At least three adjustable work lights **must** be provided, mounted to illuminate the rear of the vehicle and each of the sides.

3.23 Controls

- a) Each control **must** be permanently marked to identify the function, in both English and French or international symbols as defined by SAE J1362.
- b) Vehicle controls **must** be grouped together in the cab
- c) Controls **must** not restrict the operator's field of view.
- d) Control panel lights **must** be provided for adequate lighting for night-time operations.

3.24 Instruments

- a) A boom stowed position indicator mounted in the cab **must** be included.

- b) Indicator lights **must** be provided next to the PTO controls or equivalent, to show when the power-take-off is engaged.
- c) Instruments **must** be metric and visible to the seated operator in all lighting conditions.
- d) An ammeter, voltmeter or charging indicator **must** be provided.
- e) An engine coolant temperature indicator **must** be provided.
- f) A hydraulic oil temperature and level indicator **must** be provided.
- g) An engine oil pressure indicator **must** be provided.
- h) An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9 999 hours **must** be provided.
- i) A fuel level indicator **must** be provided.
- j) A speedometer **must** be provided.
- k) An engine tachometer **must** be provided.
- l) Differential lock indicator **must** be provided.

3.25 Paint

- a) All metal surfaces **must** be protected.
- b) The prime coating **must** be a high durability, corrosion resistant type, such as an epoxy.

3.26 Retroreflective Tape

- a) Retroreflective tape **must** be placed on the vehicle in accordance with the Motor Vehicle Safety Regulations (MVSr) C.R.C 1038 sec 108.

3.27 Corrosion Protection

- a) The vehicle **must** be designed and manufactured to prevent galvanic corrosion.
- b) The materials used in the vehicle manufacturing **must** resist damage or deterioration as a result of cleaning with hot or cold water, steam, or detergents.
- c) Rust protection must be applied to the vehicle such as crown rust control or equivalent.

3.28 Warning, Markings and Instruction Plates

- a) All identification, instructional, and warning labels **must** be bilingual or International symbols defined in SAE J1362.
- b) All identification, instructional, and warning labels **must** within view of the operator.
- c) All indicators and controls **must** be permanently labelled.

3.29 Vehicle identification

- a) The vehicle identification information **must** be permanently affixed in a conspicuous and protected location.
- b) Identification information **must** include the cab and chassis manufacturer's name, model number, serial number, and model year.
- c) Identification information **must** include the body manufacturer's model and serial number.
- d) Identification information **must** include the equipment manufacturer's model and serial number.
- e) Identification information **must** include the GVWR and GAWR ratings.

4. INTEGRATED LOGISTIC SUPPORT

4.1 Vehicle Manuals – All manuals required for the description, operation, maintenance and repair of the complete equipment, including sub-systems, **must** be provided.

4.1.1 Operator's Manuals

- a) The operator's manuals **must** be bilingual (English/French).
- b) The operator's manuals **must** include instructions for the safe operation of the vehicle.
- c) The operator's manuals **must** include daily operator maintenance instructions/checks (including lubrication).
- d) The operator's manuals **must** include safety warnings.
- e) The operator's manuals **must** include hand signals (as necessary).

4.1.2 Parts Manual(s)

- a) The parts manual(s) **must** be in English (bilingual is desirable).
- b) The parts manual **must** have illustrations showing all components of the vehicle including equipment and accessories from other manufacturers that are supplied to meet the requirements of the contract, with numbers for the itemization of the parts.
- c) The parts manual **must** have a listing for all itemized parts showing the Original Equipment Manufacturers (OEM) part number, the part name and a brief description of the item.
- d) The parts manual **must** cross reference the OEM part number to the correct illustration and item number.
- e) The parts manual **must** have a representation of bilingual warning signs and identification labels delivered on the equipment.

4.1.3 Maintenance Manuals

- a) The maintenance manual **must** be bilingual.
- b) The maintenance manual **must** include a trouble shooting guide, showing the steps and tests required to determine the exact cause of a problem and an explanation of the steps required to correct a problem.
- c) The maintenance manual **must** include a listing of the necessary tolerances, torque levels, fluid volume, and special tools (including item part numbers).
- d) The maintenance manual **must** include information on the order of disassembly and assembly of the systems and components of the vehicle.
- e) The maintenance manual **must** include special tools list as per 4.3.4.

4.1.4 Manual Delivery to Technical Authority

- a) Sample manuals **must** be submitted to the Technical Authority (TA) prior to the delivery of the vehicle/trailer for each model and or sub-system for approval. Sample manuals will not be returned.
- b) One (1) complete set of approved manuals (Operator's, Maintenance, and Parts) in electronic format **must** be delivered to the Technical Authority.

4.1.5 Manual Delivery with Vehicle

- a) One (1) complete set of manuals (Operator's, Maintenance, and Parts) **must** accompany each vehicle, shipped to each location.

- b) The manuals **must** be in paper and electronic format.

4.1.6 Electronic Format

- a) Approved copies of the electronic format manuals **must** be delivered on CD/DVD-ROM.
- b) CD/DVD-ROM **must not** require installation, password and/or Internet connection to be accessed and be an unlocked PDF in a searchable format.

4.1.7 Provisional Manuals

- a) In the event that approved manuals are not available at the time of delivery of the equipment, manuals marked "Provisional" **must** be supplied with the equipment.
- b) The contractor **must** deliver replacement approved manuals to all destinations where Provisional manuals were delivered.

4.1.8 Manual Supplements

- a) The contractor **must** supply manual supplements (Operator's, Maintenance and Parts) to support dealer-installed equipment not covered in the Vehicle Manuals.
- b) Manual supplements **must** be delivered in accordance with 4.1.4 and 4.1.5.

4.1.9 Translation and Reproduction Rights

- a) The Canadian Government **must** reserve the right to translate and reproduce, for Government use only, all or any part of the publications supplied, including the training packages delivered against the contract agreement.

4.1.10 Changes to Manuals

- a) During the period of the contract, changes to equipment, which affect the contents of manuals, **must** be reflected in the revision of the electronic and paper version of the manuals.
- b) Changes to the manuals **must** conform to the same format and presentation requirements as the original manuals.
- c) The revised electronic version of the manual **must** be sent to the Technical Authority by the Contractor.

4.2 Warranty Letter

- a) The warranty letter **must** include a list of all Canadian designated warranty service providers that will honour the warranty for the equipment and attachments (if applicable) procured under this contract, including the contact person and phone number at each warranty service provider.
- b) The warranty letter **must** include additional warranty coverage of sub-systems and a copy of the warranty letter from each sub-system's Original Equipment Manufacturer (OEM).
- c) The warranty letter **must** include warranty period as negotiated in the contract.
- d) The warranty letter **must** include Contractor contact information, name and phone number, for warranty support.

4.2.2 Warranty Letter Delivery

- a) The Contractor **must** provide a bilingual warranty letter to the Technical Authority and with each vehicle. If the Technical Authority requires the letter to be in DND format, then they will provide the Contractor a template for the DND acceptable format of the warranty letter.

4.3 Other ILS Deliverables to Technical Authority

4.3.1 Data Summary

- a) The Contractor **must** provide a bilingual Data Summary for each make/model/configuration of vehicle by completing Technical Authority's template with data and a vehicle picture.

4.3.2 Photographs

- a) The Contractor **must** provide photographs in colour, taken against a plain background, and in digital JPEG format with a minimum 10 megapixel resolution.
- b) One left front three-quarter view of a completed unit **must** be provided.
- c) One right rear three-quarter view of a completed unit **must** be provided.

4.3.3 Dimensioned Drawing

- a) One side and front view sketch showing the dimensions **must** be provided. Brochure sketches are acceptable.

4.3.4 Special Tools List - If applicable, the Contractor **must provide an itemized list of specific special tools required for the servicing and repair of the vehicle and include:**

- a) Item name;
- b) Contractor's part number;
- c) Manufacturer's part number (OEM);
- d) Quantity recommended per delivery location;
- e) Unit price; and
- f) Unit of issue.

4.3.5 Preventive Maintenance Replacement Parts Kit List (PMRPKL) - The contractor **must provide a list detailing the parts that are required to perform preventive maintenance to the system for a period of 12 months, and include:**

- a) Item name;
- b) Contractor's part number;
- c) Manufacturer's part number (OEM);
- d) Manufacturer's NATO Supply code (NCAGE) or name and address;
- e) NSN (NATO Stock Number) (if known);
- f) Quantity per equipment;
- g) Quantity recommended;
- h) Unit price; and
- i) Unit of issue.

4.3.6 Cataloguing Information

- a) The information **must** be in accordance with the terms of the contract in SACC Clause B4061C with the exception of paragraph 8.
- b) The Contractor **must** provide, upon request, the information necessary to catalogue the parts for the vehicle.

- c) The Contractor **must** supply the information within 60 days after the request is made.

4.4 Safety Recalls and Servicing Data

- a) Safety recalls, and manufacturer's technical service bulletins, or equivalent **must** be provided to the Technical Authority and the final delivery locations on a continuing basis, throughout the life expectancy of the vehicle or for no less than 10 years.

4.5 Initial Parts Kit

- a) One initial parts kit **must** be delivered with each vehicle.
- b) Each kit **must** include a complete set of filters and filter elements from the Original Equipment Manufacturer (OEM) required in the first 12 months of service.
- c) One kit per location **must** include the special tools listed in Paragraph 4.3.4.

4.6 Training

4.6.1 Maintenance Training

- a) The Contractor **must** provide a maintenance training course.
- b) The course **must** be given at the delivery destination and be available in both official languages.
- c) The course **must** have a minimum duration of one day to provide training of up to eight maintenance personnel and have the final dates arranged with the Technical Authority.
- d) The course **must** have a syllabus or course outline and schedule available for review seven days prior to the course commencement date.
- e) The course **must** include:
 - i. a complete tour and description of the vehicle;
 - ii. a walkthrough of the troubleshooting manual;
 - iii. the maintenance plan and & certification schedules; and
 - iv. students **must** be provided with hands-on instruction covering the main troubleshooting procedures of the vehicle.
- f) After completion of the course, the Contractor **must** have a "PROOF OF MAINTENANCE TRAINING" certificate signed by a Canada Representative for the destination. The Technical Authority will supply this document in an electronic format.

4.6.2 Maintenance Training Curriculum

- a) Operator's training detailed in Paragraph 4.6.4 below **must** be included in the curriculum.
- b) Operation and maintenance safety precautions **must** be included in the curriculum.
- c) Preventive maintenance including servicing schedules (10 % of classroom time) **must** be included in the curriculum.
- d) Trouble shooting, testing, and adjustments (70 % of classroom time) **must** be included in the curriculum.
- e) Special tools and test equipment **must** be included in the curriculum (if applicable).

4.6.3 Training Materials

- a) Training materials **must** be provided to each attendee, in French for locations in Quebec.
- b) Training materials **must** include a list of topics to be covered;

- c) Training materials **must** include an approximate timetable showing when topics are scheduled to be covered and how much time is scheduled for each topic;
- d) Training materials **must** list any reference material; and
- e) Training materials **must** make available any reference material used.

4.7 Familiarization Training

- a) The Contractor **must** perform at least one-day (eight hours) familiarization instruction at each destination, for a maximum of eight personnel (at each destination).
- b) The instruction **must** include the detailed operation and normal servicing of the vehicle/equipment and will be attended by CAF operators and maintainers.
- c) Familiarization instructions **must** be available in both official languages for destinations in the province of Quebec or as requested by the Technical Authority.
- d) The final dates **must** be arranged with the Technical Authority.
- e) The course **must** include:
 - i. a hands-on walkthrough of the vehicles main operations;
 - ii. available safety equipment and systems available to the operator;
 - iii. certification schedule; and
 - iv. location of confirmation of certification plates or stickers.
- f) After completion of the familiarization session, the Contractor **must** have a “**PROOF OF FAMILIARIZATION INSTRUCTION**” certificate signed by the consignee. The Technical Authority will supply this document in an electronic format, when requested.