

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
**Bid Receiving - PWGSC / Réception des soumissions**  
**- TPSGC**  
**11 Laurier Street/11, rue Laurier**  
**Place du Portage, Phase III**  
**Core 0A1 / Noyau 0A1**  
**Gatineau**  
**Québec**  
**K1A 0S5**

**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 Request for Proposal contains a security requirement.

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

**Issuing Office - Bureau de distribution**  
Medium Support Vehicle System Project/Système de  
véhicule de soutien moyen  
105 Hôtel de Ville  
Gatineau  
Quebec  
K1A 0A2

<b>Title - Sujet</b> MSVS - SMP Vehicles		
<b>Solicitation No. - N° de l'invitation</b> W8476-06MSMP/J		<b>Amendment No. - N° modif.</b> 010
<b>Client Reference No. - N° de référence du client</b> W8476-06MSMP		<b>Date</b> 2012-03-14
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$BW-008-22199		
<b>File No. - N° de dossier</b> 008bw.W8476-06MSMP	<b>CCC No./N° CCC - FMS No./N° VME</b>	
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2012-05-23</b>		<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> Specified Herein - Précisé dans les présentes <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input checked="" type="checkbox"/>		
<b>Address Enquiries to: - Adresser toutes questions à:</b> McMillan, Maryanne		<b>Buyer Id - Id de l'acheteur</b> 008bw
<b>Telephone No. - N° de téléphone</b> (819) 997-7628 ( )		<b>FAX No. - N° de FAX</b> (819) 997-0786
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> See herein		

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

## **Standard Military Pattern (SMP) Vehicles Request For Proposal (RFP)**

Solicitation No. W8476-06MSMP/J

### **Amendment # 010**

This amendment is issued:

- to respond to Bidders' questions that were asked during the Site Visit and the Bidders' conference held February 14th and 15th, 2012, in Nevada. (Set # 10).  
(See Attachment # 1 to Amendment # 010 for a list of Questions and Answers)  
In the event that one of your questions was not addressed, the onus is on the bidders to re-submit their questions to the Contracting Authority at the following address:  
NCR.MSVS@tpsgc-pwgsc.gc.ca
- to provide the presentations given at the Site Visit and Bidders' Conference (attachments 2 and 3 to this Amendment 010); and
- to revise the RFP documents, as follows:

#### **1. At Part 3, Attachment 3, Section 2, Article 5.4**

##### **Insert:**

5.4.2 NATC will provide the following equipment:

- 110/220/480 AC single and three phase electrical power
  - 150 psig compressed air supply
  - water outlets
  - a welding facility and AWS certified welders
  - Vertical Milling Machines
  - AC/DC Arc (Electrode)
  - Lathes
  - Gas (Oxygen/Acetylene)
  - Belt Sander
  - Grinder
  - MIG (wire feed)
  - Multiple Bandsaws
  - TIG (Aluminum)
  - Shears
  - Breaks
  - CNC Plasma Table
  - Metal Punch
  - Jet Carbon or Air Arc Cut
  - Tubing Bending
  - Hypertherm Max 100
  - Radial Arm Drill Press
  - 10' X 8' Fixture Table
  - 15 ton 24 ft span, 20 ft lift, 75 ft runway bridge crane
  - 2 ton over head trolley
  - Mobile 200 amp welder and a 2 ton platform truck with compressed air service, oxyacetylene welders, and a full set of hand and power tools
  - Various wrecker and recovery equipment
- The available equipment will be provided as soon as possible upon a bidders request through their test supervisor. All equipment are shared resources, conflicts with equipment availability will be resolved on a case by case basis.

Solicitation No. - N° de l'invitation  
W8476-06MSMP/J  
Client Ref. No. - N° de réf. du client  
W8476-06MSMP

Amd. No. - N° de la modif.  
010  
File No. - N° du dossier  
008bwW8476-06MSMP

Buyer ID - Id de l'acheteur  
008bw  
CCC No./N° CCC - FMS No/ N° VME

## 2. At Part 8, Article 3.1.1.5

### Delete:

"In-Inspection"

### Insert in lieu:

"Inspection"

## 3. At Part 8, Article 3.2.1.3 iv

### Delete:

"In-Inspection"

### Insert in lieu:

"Inspection"

## 4. At Part 8, Annex C

### At Table of contents, Table 3a, Delete:

"In-Inspection"

### Insert in lieu:

"Inspection"

### At Appendix 4, Delete:

Table 3a in its entirety

### Insert in lieu:

Table 3a - Inspection and Repair Plan							
Item No.	Deliverable End Item	Source	Quantity	Unit of Issue	Unit Price (ceiling)	Delivery Schedule	Remarks
4.3.001	Inspection - Vehicle	Annex B, Article 3.3.3.4.2	As and when required	EA			
	Repair Plan - Vehicle	DID SMP-ISS-016			nsp	CDRL SMP-ISS-016	
4.3.002	Inspection - Trailer	Annex B, Article 3.3.3.4.2		EA			
	Repair Plan - Trailer	DID SMP-ISS-016			nsp	CDRL SMP-ISS-016	
4.3.003	Inspection - APS	Annex B, Article 3.3.3.4.2		EA			
	Repair Plan - APS	DID SMP-ISS-016			nsp	CDRL SMP-ISS-016	

Solicitation No. - N° de l'invitation

W8476-06MSMP/J

Amd. No. - N° de la modif.

010

Buyer ID - Id de l'acheteur

008bw

Client Ref. No. - N° de réf. du client

W8476-06MSMP

File No. - N° du dossier

008bwW8476-06MSMP

CCC No./N° CCC - FMS No/ N° VME

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**ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.**

A bid already submitted may be amended prior to the closing date. Amending correspondence shall address the RFP number and the closing date and shall be addressed to:

Bid Receiving Unit  
Public Works and Government Services Canada  
Place du Portage,  
Level 0A1, Phase III  
11, Laurier Street  
Gatineau, Quebec K1A 0S5

Standard Military Pattern (SMP) No. W8476-06-MSMP/J				
Attachment # 1 to RFP Amendment # 010				
Questions and Answers (Set # 10)				
Below represent the questions raised at the SMP Site Visit/Bidders conference held on February 14th and 15th in Nevada. In the event that one of your questions was not addressed, the onus is on the bidders to re-submit their questions to the Contracting Authority at the following address: NCR.MSVS@tpsgc-pwgsc.gc.ca				
isv = informal question asked at Site Visit      sv = formal question asked at Site Visit      bc = formal question asked at Bidders' conference				
Question #	RFP Reference	Bidder Question		Response
	Part (1 to 8)	Article	Attachment	
isv167				No, ATD will not be used in the tilt table test.
isv168				Yes, the Bidders will be permitted to provide training to drivers prior to the start of the evaluation.  For Human Factor Evaluation (HFE) Training: Each Bidder will have the opportunity to provide up to 10hrs of training to each group of trial participants (a group consists of approximately 10-15 participants).  Performance Test Training: Each Bidder will have the opportunity to provide up to 16hrs of training to the NATC drivers.
isv169				Yes, each day prior to the start of testing bidders will need to sign off that their vehicle is ready for testing.
isv170				<b>Original Response at Site Visit:</b> Most of it yes. We will use Highway 50 to get from site to site. (Sand Dunes) Public roads operation/license is required as per Nevada State. / The majority of testing will be done on the NATC proving grounds. Bidder need to ensure that vehicles are licensed and insured. <b>Revised Response:</b> No, please see Part 3, Attachment 3, Section 2, Article 5.2.7 for more information.
isv171				Yes, in accordance with Part 4, Attachment 5, Section 2, Article 2.6.6.5
isv172				LHS testing will be performed intermittently.

Question #	RFP Reference		Bidder Question		Response
	Part (1 to 8)	Article	Attachment		
isv173				Will bidders be notified of vehicle failures? Vehicle Issues?	No, the Bidder will not be notified of test failures. Yes, the Bidder will be provided with (unusual) vehicle issue(s) observed during testing.
isv174				Will bidders be permitted to bring a mobile repair truck to the facility?	Yes, the Bidders will be permitted to bring a mobile repair truck to NATC. This truck or tractor-trailer must not exceed 40 ft in length.
isv175				Will the bidder permitted to store tires outside container?	Yes.
isv176				Is it possible to provide TOP documents?	No, The requested document are commercially available. Please see Part 7, Annex B, app BH, BH-617 on where to obtain the documents.
sv177				Are Bidders going to be provided with detailed test reports for their own equipment? (PAMI, DRDC)	No, please see Part 4, Attachment 5, Section 2, Article 2.6.8.2 and/or the response to Question isv173 for more information.
sv178				The US DOT provides importing of a vehicle (s) for the purpose of testing with relief from normal requirements. This includes permission to drive on public roads where it is a part of testing. The DOT is silent on the requirement for a vehicle plate but the RFP is not. Question: Is there a requirement for a vehicle (tag) license plate. If yes, can this be a plate from the country of origin of the vehicle?	It is requested, but not required that the vehicles are registered for operation on public roads in the state of Nevada. If the vehicles are not registered, a temporary permit will be obtained by NATC. Bidders must ensure their vehicles have insurance for operation on public roads in the state of Nevada.
sv179				If FSR's are not allowed to witness trials: how are test incidents being recorded and conveyed to allow an appropriate assessment?	Please see the Response to Question sv173.
sv180				Will Canada provide the test specification TOP's to the bidders?	Please see the Response to Question isv176.
sv181	2	2	5	Would Canada be willing to make an exemption to photography in the case of repairs to document and solve the damages/failure more efficient on case by case?	Please see the Response to Question sv173.
sv182	4	2	5	Is it the intention of Canada to have the demonstrations to be conducted through the Bidders personal? How is the process for the equipment operator training to the Bidders support?	No, NATC will operate the vehicles for all testing and demonstrations. DND trained drivers will operate the vehicles for the HF trials. The Bidder will only be required to operate the vehicles as part of the training provided to NATC and DND.
sv183	4	2	5	Can required spare parts be delivered at a later stage possible? (subsequently delivery) Will the two 20' containers for spares and tools be provided to the bidders? If so where?	Yes spare parts can be delivered at a later stage. No, the Bidders must provide their own containers for spares and tools.

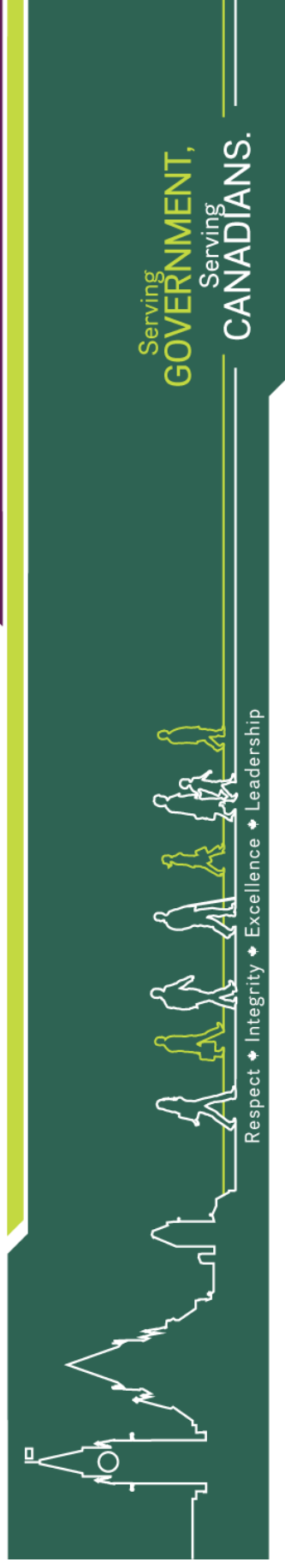
Question #	RFP Reference			Bidder Question		Response
	Part (1 to 8)	Article	Attachment			
sv184	4	2	5	Will there be a specified list of available tools and workshop equipment? Is the provided equipment available at all time? And is it to be shared with other bidders?		Yes, a list of available shop equipment will be provided. Each bidder is expected to provide basic tools to conduct routine maintenance and any special tools that may be required Please see this Amendment 010, Item 1 for more information.
sv185	4	2	5	Is there a possibility of transporting the vehicles to a service station outside the test ground in case of major repairs?		No, request to move vehicles off site will not be considered. All repairs will be monitored by NATC/PAMI.
sv186	4	2	5	Would Canada be willing to share with the Bidders their documented test results after the TCP is finished for continuous improvement process?		Please see Part 4, Attachment 5, Section 2, Article 2.6.8.2
sv187	4	2	5	Will 220V AC power be provided in shop area?		Yes.
sv188	4	2	5	Will interface data of outrigger gear be provided to bidders before trials?		Outriggers will be provided and secured to the simulated payload. The requirement for the Bidder to provide the outriggers was deleted as per Amendment 009, Item 2.
sv189				Will the vehicle be washed at the end of each day so that PMCS can be done the next morning.		The vehicles will be washed on an as needed basis. NATC washing facilities and procedure will be reviewed with each bidder prior to the vehicle be washed.
sv190				What will be the approximate time between test vehicle arriving / first inspection and actual start of the test driver's training and the evaluation trials?		A draft schedule will be provided to the Bidders prior to the start of the test program.
sv191				During the TCP how will Canada ensure that the IP of the vehicle, APS + trailer will be protected?		All Evaluators of the TCP will be required to sign a non-disclosure agreement. Documents and Materials provided for the vehicles will be locked up separately in a secure location with restricted access.
sv192				Do vehicles require DOT stickers?		No, vehicles to not require Department of Transportation (DOT) stickers. However, Bidders must ensure their vehicles have insurance for operation on public roads in the state of Nevada.
sv193				Does the detailed 500 km Mission profile shakedown represent the 500 km that NATC will test to?		The 500km Mission Profile Shakedown test will represent the MSVS SMP Mission Profile. Not all events in the MSVS SMP Mission Profile will be included in the 500km Mission Profile Shakedown test.

Question #	RFP Reference		Bidder Question		Response
	Part (1 to 8)	Article	Attachment		
sv194				What is Canada's intention/process if an unlikely event/accident caused by the driver happens to the truck so that the TCP could not be finished with this special truck because the damage of the truck is significant.	If this situation occurs, Canada will implement a solution that is fair to all Bidders.
bc195				In order to avoid unnecessary damage due to improper operation of the vehicle we propose an extensive training which involves more than the current 2-3 days. We propose that driver training should be 10 days including a dynamic part.	Please see the response to Question isv168.
bc196	7	BA-14-32		Please explain whether the contractor is required to provide storage of the tarp and superstructure when it is in the opened position?	The MRT variant tarp and superstructure is a retractable system, and therefore stays on the vehicle when it is in the 'opened' position.
bc197				In order to rectify a failure during the TCP quickly it is important to have documentation of the failure including available vehicle data. Would it be possible to obtain this documentation including pictures?	Please see the Response to Question 173
bc198				The RFP states that the TCP vehicles shall have at least the components defined under base chassis. Therefore we assume that deviations from the offered vehicle under the resulting contract acquisition are acceptable as long as we deliver a vehicle according to the definition of base chassis. How will Canada evaluate if we comply to base chassis definition and the compliance (technical) in the RFP, but not to certain criteria of the test matrix?	The test results must <i>demonstrate</i> that the Bidder is compliant with all mandatory requirements that are referenced in the test matrix.
bc199				In view of requirement that all maintenance on test vehicles at NATC shall be conducted by FSR only: Will there be maintenance documentation required. If so, for what purpose and to what maintenance level?	PAMI/NATC will be responsible for documenting maintenance activities. FSRs are required to support and facilitate the collection of the maintenance data. / English Operator and Maintenance manuals are required to support the Technical Compliance Program. Maintenance manuals must be up to level two maintenance (Major component diagnostics and replacement). Commercial manuals are acceptable.
bc200	7	3.4		Please explain how to calculate 20% of unit price upon FDA for variant A. Is the 20% on one vehicle or 20% on the total quantity of vehicles?	Unit price is the price of one unit (one vehicle).
bc201	8	Annex C	Table 3, App 4	Please clarify and describe what is meant by in-inspection. We cannot find a CDRL in the RFP.	In-Inspection is meant as Inspection as per Part 8, Annex B, Article 3.3.3.4.2 Please see this Amendment 010, Items 2, 3 and 4 for the appropriate corrections.



Question #	RFP Reference		Bidder Question		Response
		Part (1 to 8)	Article	Attachment	
bc202	Question was deleted by Bidder.				
bc203	7	App BJ	AEP-55, Vol 1 and 2, edition 2, august 2011 is specified. Edition 2 is not commercially available at this time. Will Canada revise the specification to allow Edition 1 to be used for this MSVS procurement?		Please see Amendment 007, Items 17 and 18.
bc204	7 and 8		The RFP asks for a price guarantee of 48 months (part 7) respectively 60 months (part 8) after contract award. Does this only applies for the optional quantities other equipment and item send as labour rate and parts?		Unless stated otherwise, prices for optional deliverables in Part 7 will be binding up to 48 months after Contract award in accordance with Part 7, Article 1.3.1. Labour, overhead and profit rates will remain binding for the period indentified in Part 7, Annex C, Table 6. Unless stated otherwise, prices for Part 8 will remain binding for the entire period of the Contract.
bc205	6		Financial Securities. The RFP states that contract authority has the right to request securities (incl bank guarantees) at any time and in a not specified value and duration. This would have a significant impact on the financials. Could you please specify the value + duration of the required securities?		Article 2.1 requires that the bidder must have the financial capability to fulfill this requirement. Being financially capable means that the bidder has the financial means to successfully enter into and complete such contracts as may be issued as a result of this solicitation, pursuant to the terms of such contracts.  Canada must retain the right to satisfy itself of the financial capability of bidders in order to ensure appropriate risk management practices can be applied to the contracts issued. In order to verify that a bidder has this capability, Canada may request financial and other information and consider additional appropriate security in order to satisfy itself, as indicated in the Article.  Since each bidder's financial and commercial circumstances are unique, the information necessary and security considered, if any is required, for Canada to determine a bidder's financial capability in respect of the requirements of the solicitation will vary depending on the circumstances of the Bidder

Question #	RFP Reference		Attachment	Bidder Question	Response
	Part (1 to 8)	Article			
bc205 (cont'd)					In this regard, the financial information and situation that exists to respect of any given bidder can vary widely. In order to be fair to all bidders, PWGSC must reserve to itself the ability to review all information that may be relevant for an effective financial capability analysis, and in doing so consider any securities necessary to mitigate the financial risks of the Crown. Consequently, we cannot determine in advance of the above noted financial analysis, if any securities would be required, and in the case that it is required, the specific details of the securities.
bc206				What is the reason for scenarios? Different requirements? Or to allow flexibility so bidders can met \$725 M Cap?	This is meant to obtain the maximum quantity of vehicle within the financial limit while at the same time maintain competition.



## **Medium Support Vehicle System (MSVS) Project**

### **Standard Military Pattern (SMP) Vehicle**

#### **Site Visit**

Carson City, Nevada, USA

February 14, 2012



Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

**Canada**

# Logistics

- Exits and emergency exits
- Washroom locations
- Smoking is only permitted outside the building
- Language
- Cameras, videos or any other recording device are not permitted



# Opening remarks

PWGSC (Introduction)

**Maryanne McMillan**  
*SMP Contracting Authority*

DND (MSVS Overview)

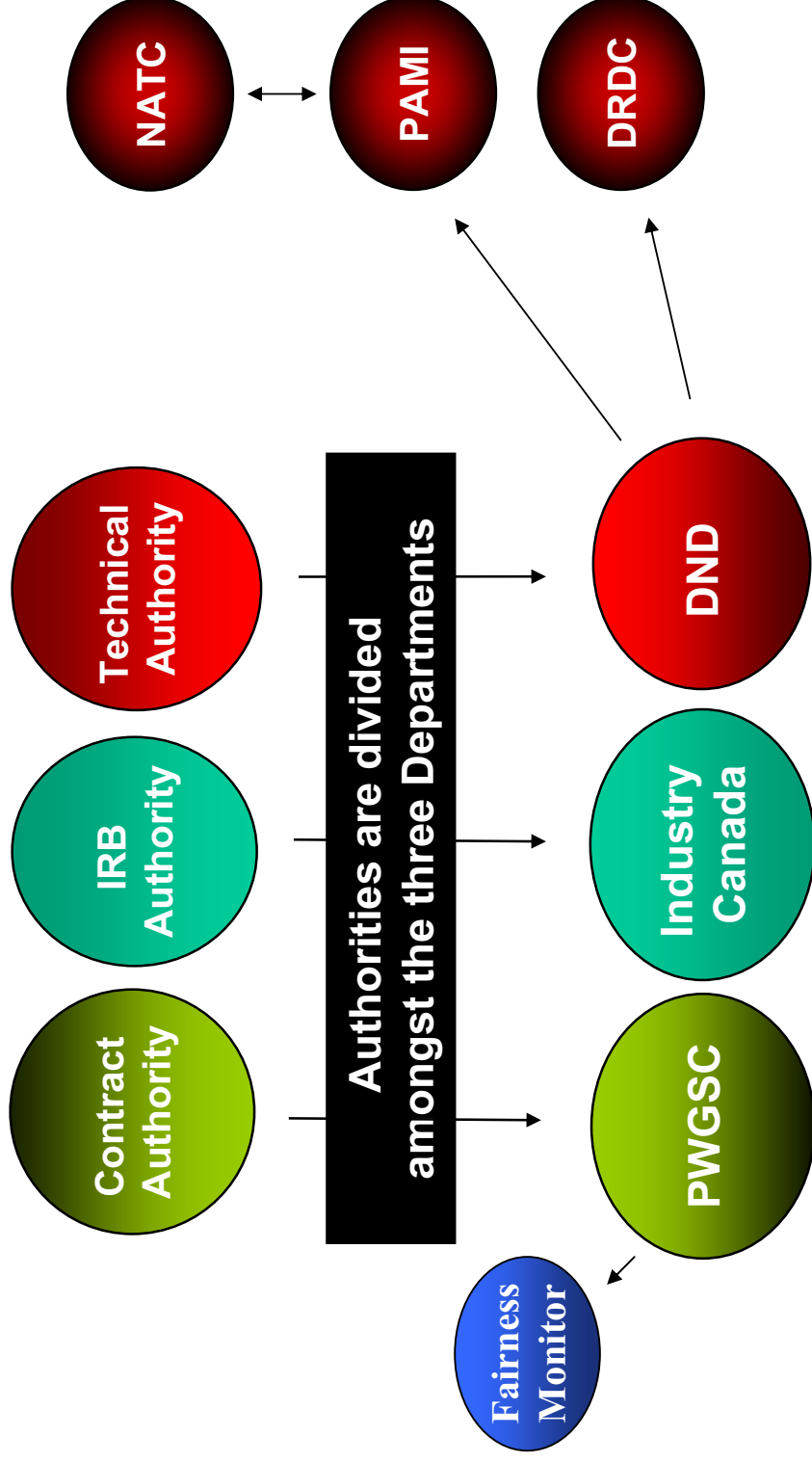
**Stéphane Siegrist**  
*MSVS Project Manager*

**LCol Tim Hall**  
*MSVS Project Director*

# Objective of the Site Visit

- To provide an overview of the Technical Compliance Program component of the SMP requirement under Request For Proposal (RFP) W8476-06-MSMP/J for the Medium Support Vehicle System Project (MSVS) Standard Military Pattern (SMP) Vehicle
- To provide a tour of the Test Site (NATC) including the test courses
- This event and all presentations are unclassified
- In the event of discrepancy, even when published on MERX, the content of this presentation does not supersede the contents of the Request for Proposal published on MERX

# Roles and Responsibilities



# Bidders Roles and Responsibilities

- Direct any concerns/clarification to the Contracting Authority
- Not to engage any discussions related to the SMP RFP with anyone else than the Contracting Authority
- Formulate questions in a most honest, fair and comprehensive manner





# Questions and Answers process

- Site Visit Q&A's process
  - Write the questions on the cards provided
  - Provide all questions into the box provided for this purpose

Question Card Template:

Bidder name:			
RFP Reference			
Part (1 to 8)	Article	Attachment	Question

# Questions and Answers process

- Site Visit Q&A's process
  - Questions answered at this Site Visit will not be binding until they are posted as an amendment to this solicitation on MERX

Example of Site Visit published Q&A's on Merx:

Standard Military Pattern (SMP) No. W8476-06-MSMP/J				
Attachment # x to RFP Amendment # x				
Questions and Answers (Set # x)				
Q #	RFP Reference		Bidder Question	Response
	Part (1 to 8)	Article	Attachment	
SV1	x	X	x	As per Site Visit: 123 Revised response: 321
SV2		X	x	As per Site Visit: 456

# Agenda

- **09:00 PWGSC Opening remarks**  
Maryanne McMillan, Contracting Authority, PWGSC
- **09:05 DND Opening remarks – MSVS Overview**  
Stephane Siegrist, Project Manager MSVS, DND  
LCol Tim Hall, Project Director MSVS, DND
- **09:15 PAMI Introduction**  
Presenter: Dave Kelly, Prairie Agriculture Machinery Institute (PAMI)
- **09:45 NATC Test Presentation**  
Presenter: Brett Horachek, Nevada Automotive Test Center (NATC)
- **10:15 Break**
- **10:30 DRDC (Human Factors Presentation)**  
Presenter: Capt Lori Coady, A/head Soldier Systems Integration Group (SSIG) DRDC

# Agenda

- 11:00 NATC Demonstration Instructions
- 11:45 Question Period
- 12:00 Lunch Break (provided)
- 13:00 NATC Site Demonstration
- 17:00 Closing Remarks

Maryanne McMillan, Contracting Authority, PWGSC





# A

## Engineering

- Ph.D – Mech, Ag Eng
- M.Sc – Mech, Elect
- P.Eng – Ag, Mech, Chemical,  
Elect, Civil, Environ
- C.E.T – Mech, Elect, Instrumentation

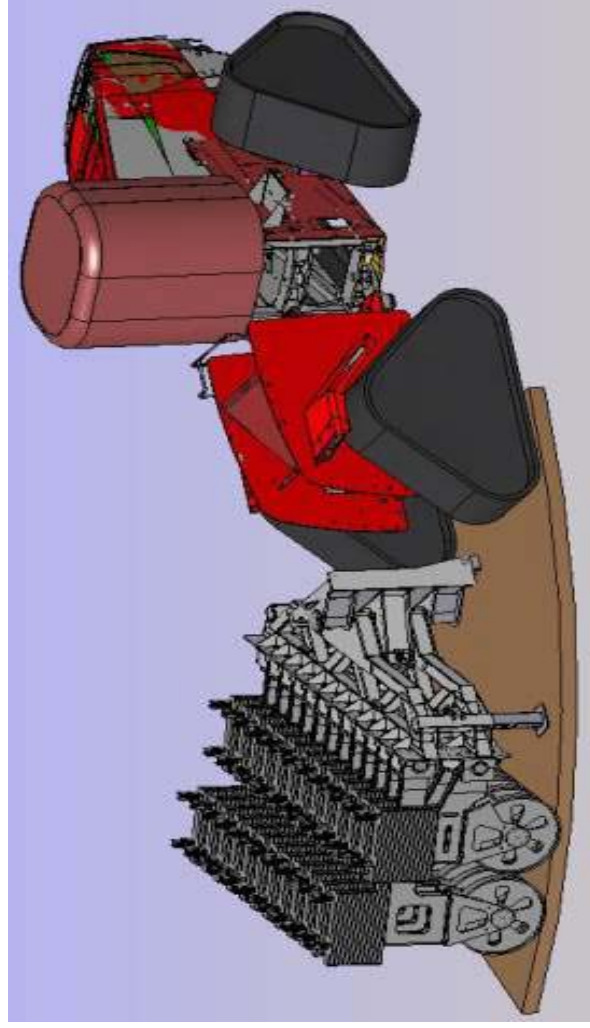
## Trades

- Industrial Mechanics
- Journeyman  
Heavy Duty Mechanics  
Welders  
Machinists
- Electrical Technicians
- Metal Workers
- Carpenters
- Industrial Spray Paint

## Support

- Technical Library
- QA
- Admin

# DESIGN



# BUILD

- Prototype Fabrication, Limited Production





# TESTING



# PAMI'S ROLE



# TECHNICAL TESTING





# WITNESS TESTING

- PAMI personnel will witness every test event



# TEST VERIFICATION



# DOCUMENTATION



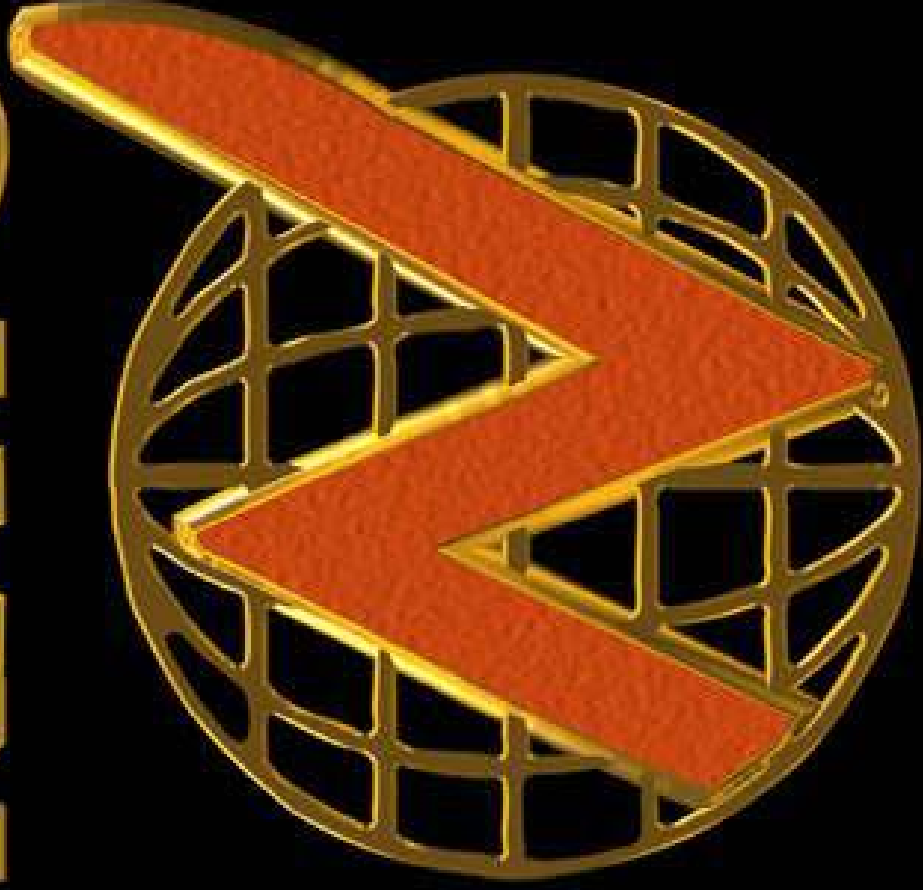




# FINAL REPORT



# NATC



Real Time,  
Real World  
Solutions™

**NEVADA AUTOMOTIVE TEST CENTER**

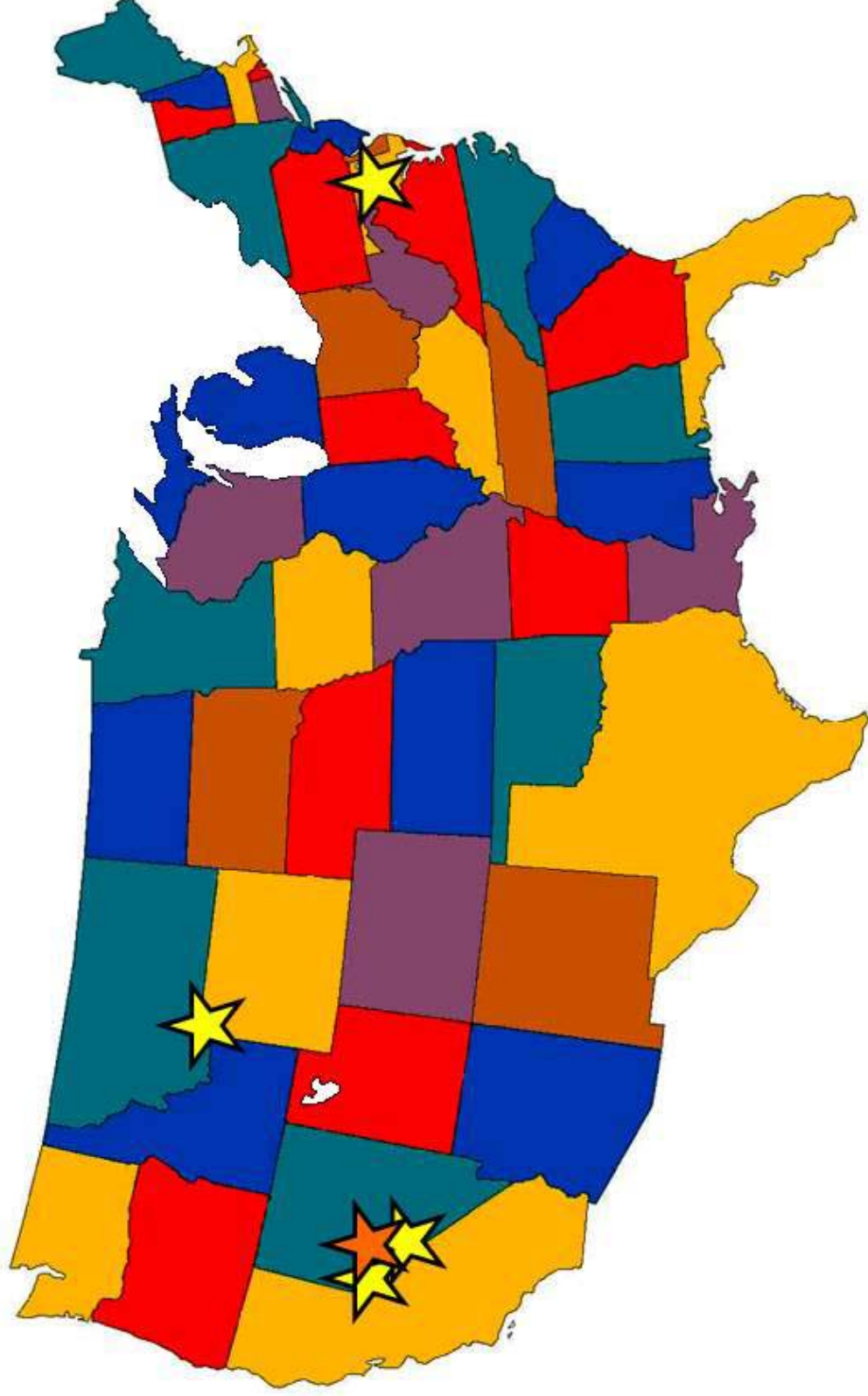


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# NATC Overview



# Offices and Facilities



# Background and Introduction

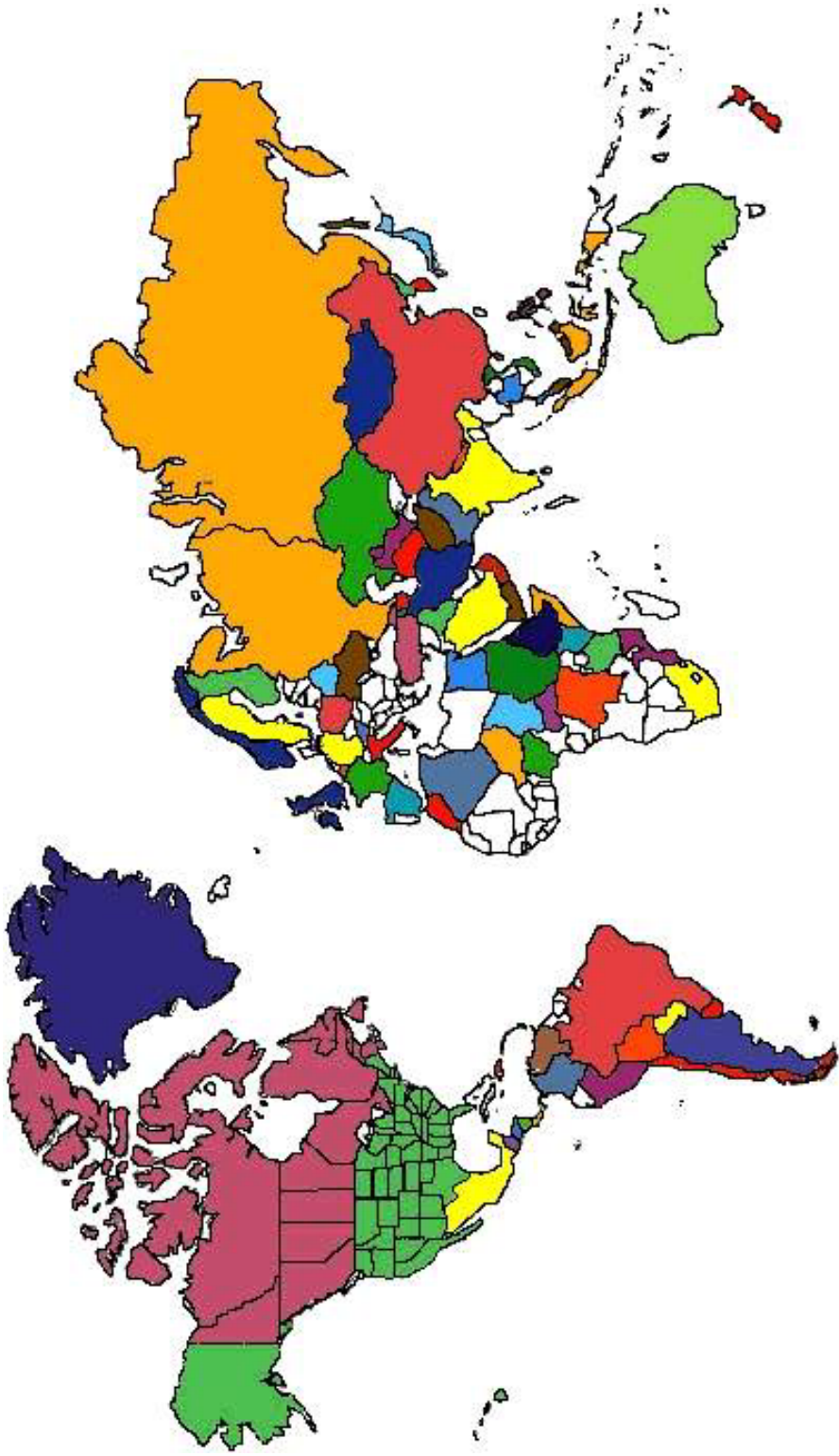


- Independent Proving Ground
- 6200 Acres Deeded
- 1200 Square Mile Operational Area
- Over 3,000 Miles of Measured Test Courses
  - Numerous Off-Site Test Areas
- Engineering Services
  - 170 Person Staff
- Thousands of Commercial and Military Vehicle System Test and Evaluation Programs Conducted
  - Wheeled and Tracked Vehicles
- Millions of Test Miles Accumulated to Accelerated Life Cycle Test Scenarios
- Tire Development Programs
- Validated Correlation to OEM, Government and International PG
- Hybrid Electric Vehicle Development
- Safety Certification Tests
- Hundreds of Weapons Systems Test Programs
- 24 Hours Per Day, 365 Days Per Year
- Motorcycle Through 300 Ton
- Vehicle Component Design, Fabrication, and Test
- Virtual Proving Ground
- Complete Vehicle Prototype Fabrication
- Instrumentation Services
- Engineering, Performance, Durability and Special Tests
- Repeatability of Test Results



# A World of Difference

85 Percent of the Earth's Terrain Types Are Found Within a 150 Mile Radius of NATC



Colored Countries: NATC has performed analysis  
or has worked in-country

# MSVS Test Events



Test NO	Performance Requirement	Referenced Procedure	Requirement References	Vehicle Configurations					
				Mandatory	Rated	LHS Variant (with APS)		RHS Variant (with APS)	
						8,000kg payload, no trailer	8,000kg payload + trailer at 8,000kg payload	Rated payload (BA-486) + Trailer at rated payload (BA-11-53)	8,000kg payload
									0kg payload
1	Inspection	NONE	(NOTE 6)						
2	Mission Profile Test	NONE	BA-564						
	Fording (750mm)	TOP 2-2-612	BA-436						
	Fording (750mm)	TOP 2-2-612	BA-11-97						
3	Rollover threshold	SAE J 2180							
4	Ride quality (absorbed power) - 6W speeds	TOP 1-1-014	BA-531						
	Ride quality (half rounds) - 2.5g speeds	TOP 1-1-014	BA-645						
5	Constant Radius Turning Circle	TOP 2-2-002	(NOTE 4)						
6	Double Lane Change	AVTP 03-160W	BA-646						
7	Braking (stopping distance from 88.6km/h)	TOP 2-2-608	BA-516						
8	Fine Grained Soil Traction Effort	MTP 2-2-619	BA-644						
		TOP 2-2-604							
	Sand Dune Maximum Gradeability	TOP 2-2-610							
9	Maximum speed	TOP 2-2-602	BA-118						
	Maximum speed	TOP 2-2-602	BA-11-103						
	Maximum speed	TOP 2-2-602							
	Acceleration (0km/h to 80km/h)	TOP 2-2-602	NONE						
	Maintain 80km/h on 2% grade.	TOP 2-2-610	BA-122						
	Maximum grade at 80km/h	TOP 2-2-610	BA-542						
10	Longitudinal gradeability (60% grade)	TOP 2-2-610	BA-124						
	Longitudinal gradeability (40% grade)	TOP 2-2-610	BA-597						
	Longitudinal gradeability (20% grade)	TOP 2-2-610	BA-369						
	Longitudinal gradeability (20% grade)	TOP 2-2-610	BA-11-104						
	Longitudinal gradeability (60% grade)	TOP 2-2-610	BA-543						
11	Side slope performance (20% grade)	TOP 2-2-610	BA-371						
	Side slope performance (30% grade)	TOP 2-2-610	BA-125						
12	Load Handling System Demonstration	See test description	BA-8-11						
			BA-8-48						
			BA-8-52						
			BA-8-94						
			BA-8-64						
			BA-11-71						
			BA-11-150						
13	Human Factor (HF) Testing	Attachment 5, Schedule 5-3	BA-364						
			BA-162						
			BA-640						
			BA-7-134						

## NOTES:

- The Bidder must satisfy all mandatory requirements at configurations identified as "M" in the test matrix. Failure will result in a non-compliant bid.
- The Bidder's response to rated requirements will be verified at configurations identified as "R" in the test matrix.
- The Bidder's response to the rated payload requirements (BA-486 and BA-11-53) will be verified via testing at configurations identified as "P" in the test matrix. To obtain payload points ALL "P" configuration tests must satisfy their corresponding requirements.
- The vehicle will be required to complete this test without displaying any abnormal or dangerous handling characteristics in order to be eligible for the double lane change test.
- The sequence of tests will not necessarily reflect the order tests are presented in the test matrix.
- All requirements labelled "INSPECT" in TCM column of Appendix BA and its corresponding attachments will be checked.
- F-34 Fuel will be used during testing program
- Altitude at the test site ranges from approximately 4,000ft to 10,000ft above sea level.
- Test Locations:

NATC - Nevada Automotive Test Center



# 500 km Mission Profile Shakedown

---

## Requirement References

### Mandatory:

**BA-564:** The Vehicle Mean Kilometres Between Mission Failures (MKBMF) shall be no less than 6,000 km. Failures are defined IAW STANAG 4158.

## Vehicle Configurations

### Mandatory:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload
- Cargo Variant – 0kg payload



# 500 km Mission Profile Shakedown



Parameter	Sensor
Speed	GPS Sensor
Acceleration at Driver's Seat Base	Triaxial Accelerometer
Acceleration at One Troop Seat	Triaxial Accelerometer
Acceleration at Center of Trailer	Triaxial Accelerometer

## Objective

- Demonstrate capability of vehicle to traverse 500 km of mission profile terrain without hardware failure
  - Varied terrain, includes fording events

## Procedure Reference

- None

## Estimated Duration

- Five days per vehicle

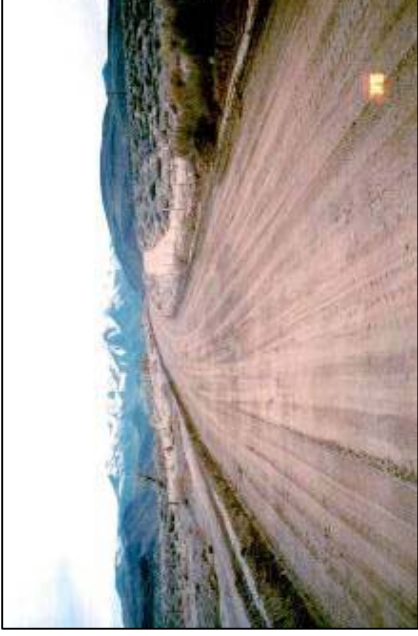


# 500 km Mission Profile Shakedown

---



Primary Roads



Secondary Roads



Trails



Cross Country



# 500 km Mission Profile Shakedown

Mission	Unit of Measure	Qty	Comments	Mission	Unit of Measure	Qty	Comments
a. Time	Duration in hours	10		p. Hard acceleration	Times per mission (accel. of at least 20 km/hr)	50	
b. Length	Distance in km	200		q. Hard turns	Steering limiter hits per mission	75	
c. Idling time	Hours	2		r. LHS load cycle	Times per 10 missions	64	LHS vehicles only
d. Paved road	% of distance	20	Approx 100 km/h	s. Crane operation	Hour per mission	1	Vehicles with crane only
e. Secondary road	% of distance	50	Approx 60 km/h	t. Crane operation	Cycles per mission	12	At maximum capacity
f. Trails	% of distance	25	Approx 20 km/h	u. All Wheel Drive	Distance in meters per mission	20000	
g. X-Country	% of distance	5	Approx 3-5 km/h	v. Differentials locked (when applicable)	Distance in meters per mission	1000	
h. Night driving	% of time	40		w. Self Recovery	Times per mission	1	Vehicles with winch only
i. Reverse gear	Times per mission	10		x. Self Recovery	Distance in Meters per event	100	Vehicles with winch only
j. Average speed	km/h	30		y. Suspended tow	Times per 50 Missions	1	At GVW
k. Max speed	km/h	110	Dash or unsustained speed up to	z. Suspended tow	Distance in Kilometres per event	80	At GVW
l. Fording	Times per mission	1		aa. Driving with chains	Maximum occurrence per mission	2	Note: occurs in winter or marginal traction conditions.
m. Trailer towing	% of time	30		ab. Driving with chains	Distance in Kilometres per event.	50	Note: Speed reduced IAW OEM and chain manufacturer recommendations, typically in the 15-40 Kph range.
n. Shutdown / start	Times per mission	4		ac. Camouflaging vehicle	Times per Mission	1	2 personnel climbing on vehicle.
o. Hard braking	Times per mission (deceleration of at least 20 km/hr)	50		ad. Ferrying Ops	Times per year	2	



## Fording (750mm)

---

### Requirement References

#### Mandatory:

**BA-436:** The Vehicle shall ford a water obstacle to a depth of 750 mm without preparation IAW STANAG 2805.

**BA-11-97:** The Trailer shall ford a water obstacle to a depth of 750 mm without preparation IAW STANAG 2805.

### Vehicle Configurations

#### Mandatory:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload
- Cargo Variant – 0kg payload

# Fording (750mm)



**Objective**

- Determine if test vehicle is capable of fording a hard bottomed water crossing at a maximum water depth of 750 mm in IAW STANAG 2805.



<b>Procedure Reference</b> <ul style="list-style-type: none"><li>• TOP 2-2-612</li><li>• STANAG 2805</li></ul>
<b>Estimated Duration</b> <ul style="list-style-type: none"><li>•Concurrent with 500 km Shakedown</li></ul>

Parameter	Sensor
Speed	GPS Antenna



# Static Roll Threshold

---

## Requirement References

### Rated:

**BA-531:** The Vehicle should be capable of attaining a static rollover threshold (ROT) up to 40 degrees at GVW. The ROT will be measured using the procedures IAW SAE J2180.

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer





# Static Roll Threshold



Parameter	Sensor
Front Bumper Angle	Inclinometer
Front Axle Angle	Inclinometer
Rear Axle Angle	Inclinometer
Rear Bumper Angle	Inclinometer
Tilt Table Angle	Inclinometer

**Objective**

- Determine roll threshold
- Estimate CG height

**Procedure Reference**

- SAE J2180

**Estimated Duration**

- One day per vehicle



# Ride Quality (Absorbed Power)

## Requirement References

### Rated:

**BA-645:** The Vehicle should attain no more than 6 watts average vertical absorbed power, as measured at the driver's location (not including energy absorbed by the seat), while negotiating the following Root Mean Square (RMS) ride courses at speeds listed below, with the tires at normal cross country inflation pressure.

RMS (inches)	1.0	1.2	2.4	3.6
km/h	55 - 75	45 - 60	20 - 30	15 - 20

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer





# Ride Quality (Absorbed Power)



Parameter	Sensor
Speed	GPS Sensor
Acceleration at Driver's Seat Base	Triaxial Accelerometer
Acceleration at One Troop Seat	Triaxial Accelerometer

## Objective

- Measure the amount of vibration transmitted from the road to the vehicle operator and crew over terrain of increasing roughness
  - 1.0, 1.2, 2.4, 3.6 Inch RMS

## Procedure Reference

- TOP 1-1-014

## Estimated Duration

- Three days per vehicle



# Ride Quality (Half Rounds)

## Requirement References

### Rated:

**BA-670:** The Vehicle should attain no more than 2.5g vertical acceleration, as measured at the driver's location (not including energy absorbed by the seat), while negotiating the following half round courses at speeds listed below, with the tires at normal cross country inflation pressure.

Half Round (inches)	6	8	10	12
Speed (km/h)	45-50	25-30	20-25	15-18

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer

# Ride Quality (Half Rounds)



Parameter	Sensor
Speed	GPS Sensor
Acceleration at Driver's Seat Base	Triaxial Accelerometer
Acceleration at One Troop Seat	Triaxial Accelerometer

## Objective

- Measure the amount of shock transmitted to vehicle occupants over half rounds of increasing diameter
  - 6, 8, 10, 12 inch half rounds

## Procedure Reference

- TOP 1-1-014

## Estimated Duration

- Two days per vehicle

# Constant Radius Turning Circle

---



## Requirement References

The Vehicle will be required to complete this test without displaying any abnormal or dangerous handling characteristics in order to be eligible for the double lane change test.



# Constant Radius Turning Circle



Parameter	Sensor
Speed	GPS Antenna
Lateral Acceleration at Vehicle CG	Inertial Measurement Unit (IMU)
Roll Rate	IMU
Yaw Rate	IMU
Steering Wheel Angle	Displacement Transducer

## Objective

- Determine maximum speed in a 200 foot constant radius turn
- Determine maximum lateral acceleration
- Evaluate vehicle end limit steady state handling characteristics

## Procedure Reference

- TOP 2-2-002

## Estimated Duration

- One day per vehicle

# Double Lane Change



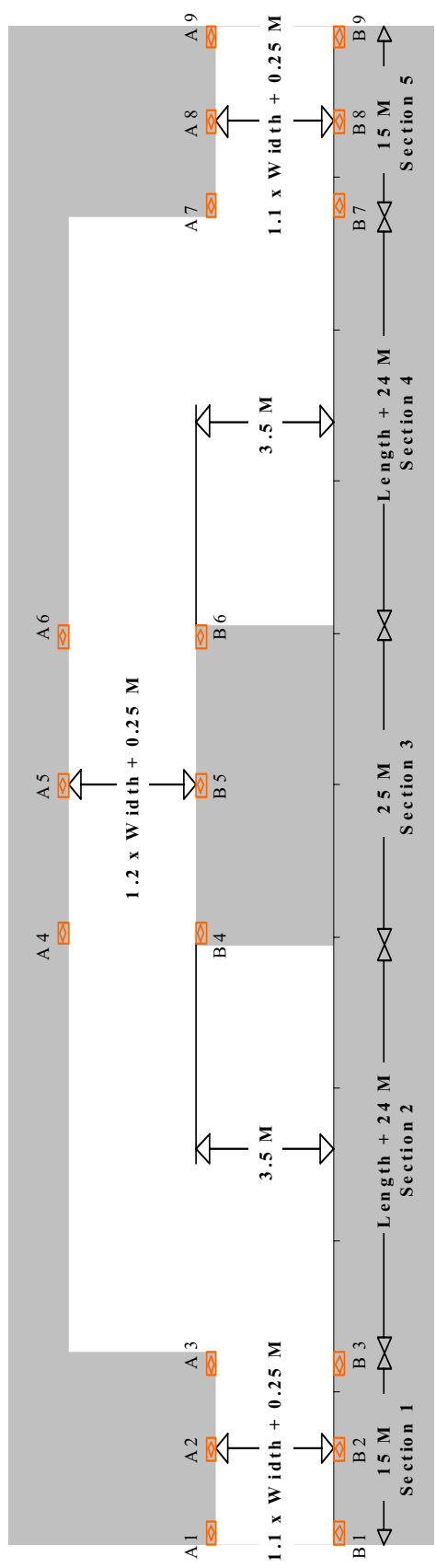
## Requirement References

### Rated:

**BA-646:** The Vehicle should attain a lane change speed of up to 90km/h at GVW. This requirement will be assessed using the course defined in AVTP 03-160W, Annex A.

## Vehicle Configurations

**Rated:** LHS Variant (with APS) – 8,000kg payload, no trailer





# Double Lane Change



Parameter	Sensor
Speed	GPS Antenna
Lateral Acceleration at Vehicle CG	IMU
Roll Rate	IMU
Yaw Rate	IMU
Steering Wheel Angle	Displacement Transducer

**Objective**

- Determine maximum speed through paved double lane change course

**Procedure Reference**

- AVTP 03-160W

**Estimated Duration**

- One day per vehicle



# Braking

## Requirement References

### Rated:

**BA-516:** The Vehicle stopping distance from 55 mph (88.6 km/h) to 0 mph at GVW, without any part of the Vehicle leaving a 12 ft (3.6 m) lane, should be as short as possible.

Stopping distance will be assessed on a dry paved surface with minimal grade.

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer





# Braking



Parameter	Sensor
Speed	GPS Antenna
Longitudinal Acceleration at CG	IMU
Yaw Rate	IMU
Brake Force	Pedal Force Transducer
Brake Pad Temperature	Infrared Pyrometer
<b>Procedure Reference</b> <ul style="list-style-type: none"><li>• TOP 2-2-608</li></ul>	
<b>Estimated Duration</b> <ul style="list-style-type: none"><li>• One day per vehicle</li></ul>	

<b>Objective</b> <ul style="list-style-type: none"><li>• Measure stopping distance from speeds up to an including 55 mph on paved surfaces</li><li>• Evaluate ability to stay in a 12 foot lane while braking</li></ul>
---



# Soft Soil – Fine Grained Tractive Effort

---

## Requirement References

### Rated:

**BA-644:** The Vehicle at GVW should attain a drawbar pull of up to 0.5 of GVW on fine grained soil.

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer

# Fine Grained Tractive Effort



**Objective**

- Define tractive capabilities of the vehicle
- Measure the drawbar pull of the vehicle in a fine grained soil bin.

Parameter	Sensor
Speed	GPS Antenna
Wheel Speed	Wheel Encoder
Soil Cone Index	Cone Penetrometer (Manual)
Drawbar Load	Load Cell

**Procedure Reference**

- MTP 2-2-619
- TOP 2-2-604
- Mud/Sand/Snow inflation pressure only

**Estimated Duration**

- Three days per vehicle



# Sand Dune Maximum Gradeability

---

## Requirement References

### Rated:

**BA-668:** The Vehicle at GVW should ascend sand grades up to 45%.

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer

# Sand Dune Maximum Gradeability



## Objective

- Assess the maximum grade climbing capability of the vehicle in course grained soil with moisture content less than one percent

Parameter	Sensor
Speed	GPS Antenna
Wheel Speed	Wheel Encoder
Soil Cone Index	Cone Penetrometer (Manual)
Slope Grade	Abney Level (Manual)
Vehicle Angle	Smart Level (Manual)

## Procedure Reference

- TOP 2-2-610

## Estimated Duration

- Two days per vehicle



# Maximum Speed

## Requirement References

### Mandatory:

**BA-118:** The Vehicle shall be capable of sustained operation on flat, hard-surfaced roads at a cruising speed of 90 km/h.

**BA-11-103:** The Trailer shall be capable of sustained operation on hard surfaced roads at a cruising speed of 90 km/h.

### Rated:

**BA-120:** The Vehicle should be capable of sustained speeds on flat, hard-surfaced roads of up to 110 km/h.



# Maximum Speed

---

## Vehicle Configurations

### Mandatory:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload

### Rated:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload



# Acceleration

---

## Requirement References

### Rated:

**BA-514:** The Vehicle should have the shortest possible acceleration time, from 0 km/h to 80 km/h, while at GVW.

## Vehicle Configurations

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer



# Maximum Speed and Acceleration



Parameter	Sensor
Speed	GPS Antenna

**Objective**

- Assess ability to sustain 90 km/h on flat, hard surface roads
- Determine maximum speed capability
- Measure acceleration time from 0 km/h to 80 km/h

**Procedure Reference**

- TOP 2-2-602

**Estimated Duration**

- One day per vehicle

# Speed on Grade



## Requirement References

### Mandatory:

**BA-122:** The Vehicle shall be able to maintain a speed of 80 km/h at GVW on a hard-surfaced 2% grade.

### Rated:

**BA-542:** The Vehicle should be able to maintain a speed of 80 km/h at GVW on hard-surfaced grades up to 5%.

## Vehicle Configurations

### Mandatory:

- LHS Variant (with APS) – 8,000kg payload, no trailer
- LHS Variant (with APS) – Rated payload (BA-486)

### Rated:

- LHS Variant (with APS) – 8,000kg payload, no trailer



# Speed on Grade



Parameter	Sensor
Speed	GPS Antenna
Drawbar Load	Load Cell

**Objective**

- Assess ability to sustain 80 km/h on hard surface roads with grades
- A towed dynamometer will be used to simulate the equivalent load for the required test grade

**Procedure Reference**

- TOP 2-2-610

**Estimated Duration**

- One day per vehicle



# Longitudinal Gradeability

## Requirement References

### Mandatory:

**BA-124:** The cargo variant shall be able to climb and descend, at all loading conditions up to and including GVW, with intermediate stops, a hard surfaced 60% slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

**BA-597:** The cargo with crane, LHS, MRT and gun tractor variants shall be able to climb and descend, at all loading conditions up to and including GVW, with intermediate stops, a hard surfaced 40% slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

**BA-369:** The cargo, cargo with crane, MRT and LHS variants shall be able to climb and descend, at all loading conditions up to and including GCW, with intermediate stops, a hard surfaced 20% slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

**BA-11-104:** The Trailer, when towed by the LHS variant, shall be able to ascend and descend, with intermediate stops, a hard surfaced 20% slope (dry and free of loose materiel) in a controlled manner, in both the forward and reverse direction, without malfunction.



# Longitudinal Gradeability

## Requirement References

### Rated:

**BA-543:** The cargo with crane, gun tractor, MRT and LHS variants should be able to climb and descend, at all loading conditions up to and including GVW, with intermediate stops, on a hard surfaced 60% slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

## Vehicle Configurations

### Mandatory:

#### BA-124:

- Cargo Variant – 0kg and 8,000kg payload
- Cargo Variant – Rated payload (BA-486)

#### BA-597:

- LHS Variant (with APS) – 0kg and 8,000kg payload, no trailer
- LHS Variant (with APS) – Rated payload (BA-486)

#### BA-369 and BA-11-104:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload
- LHS Variant (with APS) – Rated payload (BA-486) + Trailer at rated payload (BA-11-53)

### Rated:

#### BA-543:

- LHS Variant (with APS) – 8,000kg payload, no trailer



# Longitudinal Gradeability



Parameter	Sensor
Speed	GPS Antenna

## Objective

- Evaluate stability, engine performance, service and parking brakes and controllability on hard surfaced longitudinal grades
  - 20, 40, and 60 percent grades

## Procedure Reference

- TOP 2-2-610

## Estimated Duration

- Two days per vehicle



# Side Slope Performance

## Requirement References

### Mandatory:

**BA-371:** The LHS variant shall be able to operate on and traverse, at all loading conditions up to and including GCW, with intermediate stops, a hard surfaced 20% side slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

**BA-125:** The cargo, cargo with crane, MRT and gun tractor variants shall be able to operate on and traverse, at all loading conditions up to and including GCW, with intermediate stops, a hard surfaced 30% side slope (dry and free of loose materiel) in a controlled manner, in both forward and reverse direction, without loss of fluids or malfunction.

## Vehicle Configurations

### Mandatory:

**BA-371:** LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload

**BA-125:** Cargo Variant – 8,000kg payload + trailer at 8,000kg payload



# Side Slope Performance



Parameter	Sensor
Speed	GPS Antenna
Steering Wheel Angle	Displacement Transducer

**Objective**

- Evaluate stability, engine performance, braking and controllability on side slopes
  - 20 and 30 percent side slopes

**Procedure Reference**

- TOP 2-2-610

**Estimated Duration**

- One day per vehicle





# Load Handling

## Requirement References

### Mandatory:

**BA-8-11:** The LHS variant shall be able to self-load, self-offload, and transport a 20' ISO container weighing up to the maximum payload of the Vehicle. The container will be designated Type 1C, IAW ISO 668.

**BA-8-48:** The LHS variant shall be able to transfer a 20' ISO container weighted up to the maximum payload of the Vehicle to and from the Trailer detailed at Attachment BA-11. The container will be designated Type 1C, IAW ISO 668.

**BA-8-52:** The LHS shall automatically guide and center a 20' ISO container or flatrack on the Vehicle during the loading operation.

**BA-8-94:** The LHS shall be capable of loading, off loading and cross loading fully payloaded ISO containers and Flatracks under the following conditions:

- a. on uneven ground having a side slope / longitudinal slope of +/- 5 degrees; and
- b. from an approach angle of +/- 5 degrees from the vertical and / or the horizontal.

**BA-8-64:** A single operator shall be able to safely perform all LHS operations.

**BA-11-71:** The Trailer shall be equipped with a system to accept the transfer of ISO containers or flat racks, by a single operator, to and from the LHS variant.

**BA-11-150:** The Trailer shall be capable of being loaded, off loaded and cross loaded with fully payloaded ISO containers and flat racks under the following conditions:

- a. on uneven ground having a side slope / longitudinal slope of +/- 5 degrees; and
- b. from an approach angle of +/- 5 degrees from the vertical and / or the horizontal.

## Vehicle Configurations

### Mandatory:

- LHS Variant (with APS) – 8,000kg payload + trailer at 8,000kg payload



# Load Handling

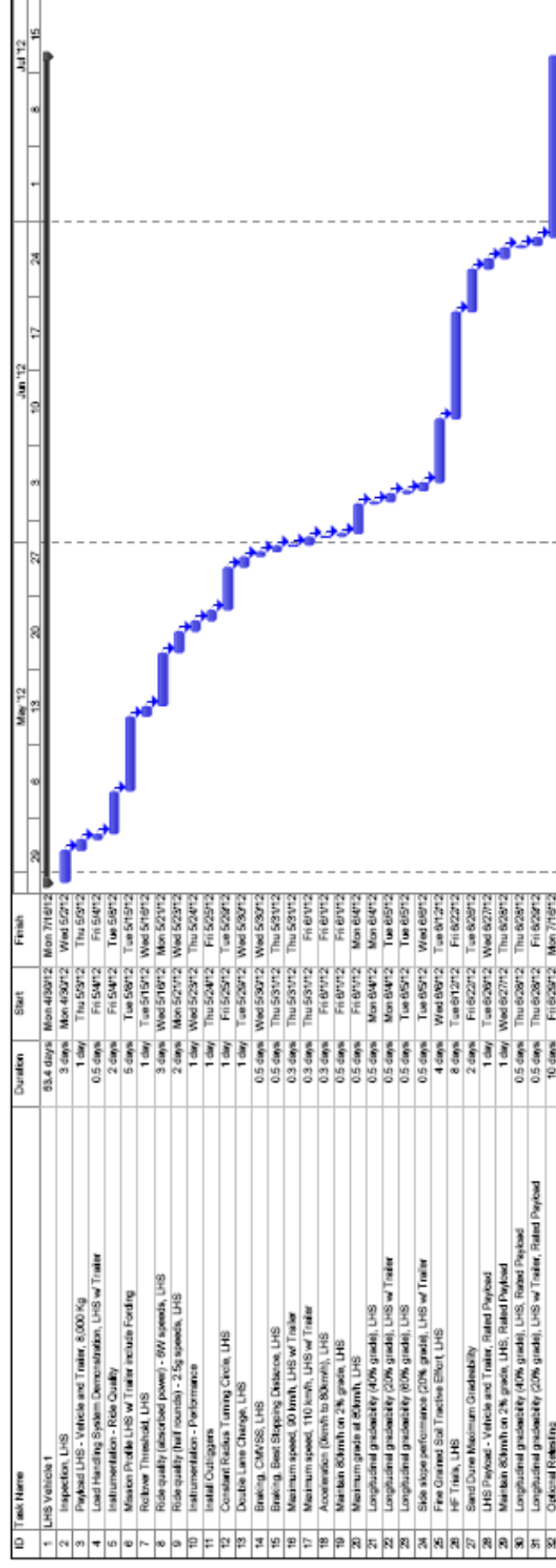
Parameter	Sensor
Vehicle and Trailer Misalignment	Laser Protractor
<b>Procedure Reference</b> <ul style="list-style-type: none"> <li>• None</li> </ul>	
<b>Estimated Duration</b> <ul style="list-style-type: none"> <li>• One day per vehicle</li> </ul>	

**Objective**

- Demonstrate that a single operator shall be able to safely perform all LHS operations
  - Self-load/transport a ISO container
  - Transfer container to and from Trailer
  - Automatically guide and center a container on the vehicle during a loading operation
- Evaluate ability to handle misalignment of up to five percent



# Test Schedule – LHS Vehicle 1





## Test Logistics – Facilities

---

- An office space will be provided for each Bidder, to include power and internet provisions. Office space will be located near the ISO containers and vehicle storage area.
  - Internet access will not be available at any location outside of the offices
- Parking space will be provided near the offices, FSRs will be responsible for transportation to and from the NATC facility.
- Dedicated maintenance bays will not be provided.
  - An open area near ISO containers will be available for daily and short-duration maintenance and repairs.
  - Private maintenance bays will be provided for major repairs on a case-by-case basis.
- Vehicles and ISO containers will be kept in a fenced, secure location
- Each FSR will be restricted to the office space area unless accompanied by a NATC escort as necessary.



## Test Logistics - Schedule

---

- Test equipment can arrive at NATC at any point prior to bid closure  
ATTN: Brett Horachek      Brennan Paterson  
605 Fort Churchill Rd      (775) 690-7759  
Silver Springs, NV 89429      bpaterson@natc-ht.com
- FSRs must be on-site prior to bid closure for unloading of equipment, security sign-in and initial inspection.
- Once testing commences, each Bidder will be provided a single NATC point of contact to manage schedule and additional requests.
- A weekly schedule will be provided. The schedule will be subject to change as needed.



# Test Logistics – Daily Inspection

## Form (DIF)

- A NATC or PAMI representative must be present for all maintenance or repair work performed on each vehicle.
- Daily inspections must be completed outside of the test window.
  - At the start of each test day, an FSR must provide a signed DIF to establish test readiness of the vehicle to be eligible for that day's testing.
  - Other maintenance will be scheduled as needed
- Vehicle configuration changes will not be allowed throughout the duration of the evaluation. Replaced parts must be identical to parts removed from the vehicle.



# Medium Support Vehicle Systems (MSVS) Standard Military Pattern (SMP) Trial

Human Factors (HF) Analysis

Capt Lori Coady  
A/Head Soldier Systems Integration Group (SSIG)



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## MSVS SMP HF Trial

- Outline
  - Introduction
  - Meeting the HF requirements
  - Data Measures
  - Conclusions
  - References



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## Introduction

- Soldier Systems Integration Group (SSIG) mandate:
  - As part of DRDC Toronto, focuses on research, development, test and evaluation of equipment applicable to Army operations.
  - To enable and enhance the performance of soldiers by implementing and validating the integration of equipment for Canadian Forces (CF) Army personnel.



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## Introduction

- Performance evaluations based on physiological measurements, mobility assessments, and task criteria;
- Ergonomic assessments of crew work stations;
- Usability assessments of all soldier equipment and vehicle systems;
- Equipment integration acceptability assessments;
- Anthropometric measures, and
- Focus groups to identify shortcomings on current equipment in order to properly integrate new technologies.



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## Meeting the HF Requirements

- Analyze the system in which Canadian Forces members will operate
  - task criteria
- Develop plan on how to assess HF in the system
- Execute HF analysis
- Deliver report to provide results and feedback



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## MSVS SMP HF Trial

- Four weeks of data collection of 20 participants
- Broken down into 2 x groups of 10
- Realistically – 2 x 2 week trials
- Focused on the cargo variant
- LHS variant may be evaluated



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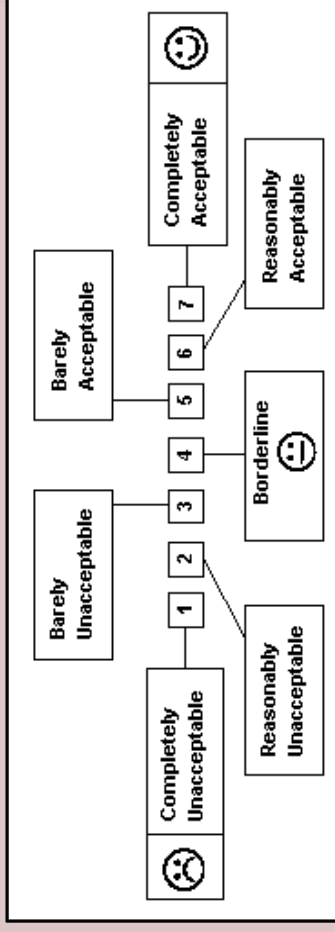
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## Meeting the HF for the SOR

- Quantitative and Qualitative analysis
  - Instrumented as well as user /acceptance and feedback
- Vibration
- Field of Vision
- Range of Motion
- Anthropometric measurements
  - What population of the CF was represented in the trial
- Focus Groups



Likert Scale



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## MSVS SMP HF Trial

- Will Evaluate
  - Driver/passenger station
  - Control design and operation
  - External/internal visibility
  - Cab environment
  - Vehicle ride quality



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## MSVS SMP HF Trial

- Conditions x 4 (C1, C2, C3, C4)
- C1 – CADPAT w/ soft cap
- C2 – Full Fighting Order (FFO) w/plates
- C3 – Full Fighting Order w/ mounted Night Vision Goggles (NVG)
- C4 – Mukluks and Gortex Gloves
- C1 and C2 will be both static and dynamic (driving)
- C3 and C4 will be static



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## MSVS SMP HF Trial

- Dynamic stands – Day (E1), Night (E2)
- Each subject will drive each cargo variant 500km
- 225km for each day C1 (Baseline) and C2 (FFO) condition
- 50km for Night (to establish visibility concerns)
- Broken down
  - Terrain 1 (T1) – Highway (continuous speed up to 100km/hr)
  - Terrain 2 (T2) – Urban (varying speeds as well as turning/braking)
  - Terrain 3 (T3) – Off road (gravel, black track)
  - Terrain E2 (TE2) – Night drive – combo hwy, urban and off road



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## MSVS SMP HF Trial

- Ex:
- T1E1 – Highway Day drive = 140km
- T2E1 – Urban Day drive = 60km
- T3E1 – Off road Day drive = 25km



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## MSVS SMP HF Trial

- Ex:
- Participant 001 will first drive Vehicle “1” while wearing Condition “1” on all Terrain during the day
- V1-C1-T1-E1
- V1-C1-T2-E1
- V1-C1-T3-E1
- Cargo variant “1” while wearing CADPAT and soft cap



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## MSVS SMP HF Trial

- Day 1
  - Anthropometric measurements
  - Vehicle introduction and famil (by Bidders)
- Day 2 – Day 11
  - Data collection on cargo and LHS variant (limited access to LHS)
  - Dynamic (driving) and static stands
- Day 12 – Focus Group (Turning Point)



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## MSVS SMP HF Trial

- Drivers will only do Condition 1 (C1) for Night drive
  - CADPAT w/soft cap
- Will only drive as many nights as number of vehicles
  - i.e. Participant 001 will drive cargo variant “1” once at night
- Leaves flex time for NVG/night visibility static stands



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## MSVS SMP Schedule Example

	8-12			1300-1700				1930-2200	
Subject	0800-1000	1000-1100	1100-1200	1300-1400	1500-1600	1600-1700	1930-2045	2045-2200	
1	C1-V1-T1-E1	C1-V1-T2-E1	C1-V1-T3-E1				C1-V1-T-E2	codriver	
2	C1-V2-T1-E1	C1-V2-T2-E1	C1-V2-T3-E1				C1-V2-T-E2	codriver	
3	C2-V3-T1-E1	C2-V3-T2-E1	C2-V3-T3-E1	codriver	codriver	codriver	C1-V3-T-E2	codriver	
4	C2-V4-T1-E1	C2-V4-T2-E1	C2-V4-T3-E1	codriver	codriver	codriver	C1-V4-T-E2	codriver	
5	codriver	codriver	codriver	C1-V3-T1-E1	C1-V3-T2-E1	C1-V3-T3-E1	codriver	C1-V3-T-E2	
6	codriver	codriver	codriver	C1-V4-T1-E1	C1-V4-T2-E1	C1-V4-T3-E1	codriver	C1-V4-T-E2	
7	codriver	codriver	codriver	C2-V1-T1-E1	C2-V1-T2-E1	C2-V1-T3-E1	codriver	C1-V1-T-E2	
8	codriver	codriver	codriver	C2-V2-T1-E1	C2-V2-T2-E1	C2-V2-T3-E1	codriver	C1-V2-T-E2	
9				codriver	codriver	codriver			
10				codriver	codriver	codriver			



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# Turning Point software



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- Founded in 2005
- Canadian leader of interactive response solutions
- Three basic elements make up a typical response system:

- 1-Polling software



- Is a software add-on to Microsoft® PowerPoint

- 2-Response keypads



- Develops and administers real-time assessments

- 3-Response receiver



- Simple and quick to use
- 5 different models (ResponseCard NXT)



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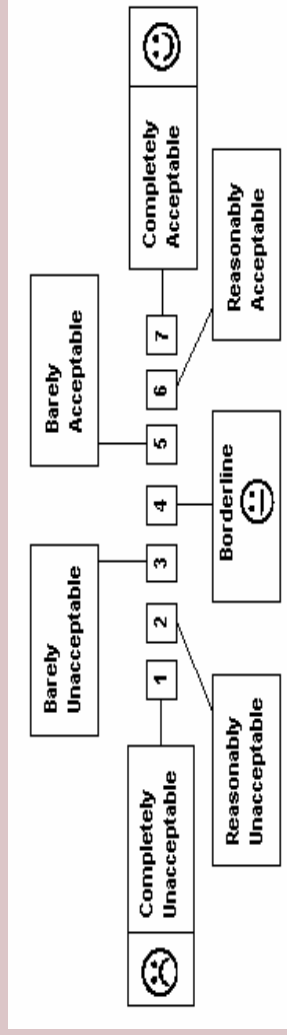
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## Rating System for Functionality Questions

- Participants will be presented with a series of slides created using Turning Point Software which asks them to rate the acceptability of a functional component of a vehicle variant. Participants will use a 7-point Likert Acceptability scale shown below to rate each feature.



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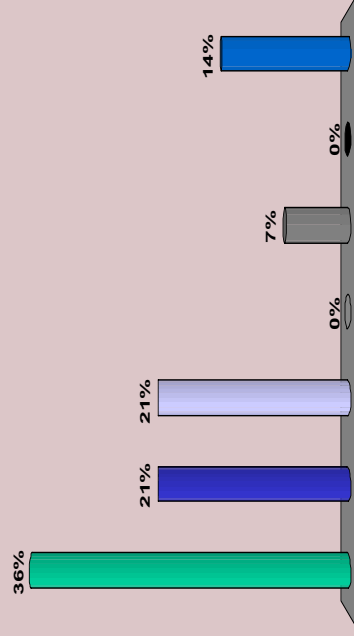




## Rate the performance of the Ford Fiesta



1. Completely Unacceptable
2. Reasonably Unacceptable
3. Barely Unacceptable
4. Borderline
5. Barely Acceptable
6. Reasonably Acceptable
7. Completely Acceptable



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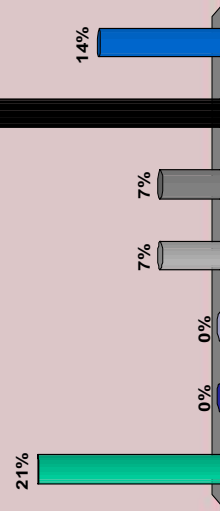
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## Rate the performance of the Ford GT



1. Completely Unacceptable
2. Reasonably Unacceptable
3. Barely Unacceptable
4. Borderline
5. Barely Acceptable
6. Reasonably Acceptable
7. Completely Acceptable



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## Conclusion

- SSIG will complete HF trial by the end of June (tentative)
- Will conduct both quantitative (instrumented) as well as qualitative (user feedback and trial staff observations)
- Will use approx 20 Canadian Forces qualified drivers
- Will focus on the cargo variant



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## References

- MIL-STD-1472
- MIL-STD-810
- MSVS SMP SOR
- Bid Preparation Instructions and Evaluation Plan
  - Attachment 5 – Proposal Evaluation Plan
    - Schedule 5-3 – Human Factors Testing Requirements
    - Schedule 5-4 – Human Factors Testing Requirements
- MSVS ADM (Mat) DGMPD (L&S) DRDC Toronto Tasking
  - Dated 28 July 2011



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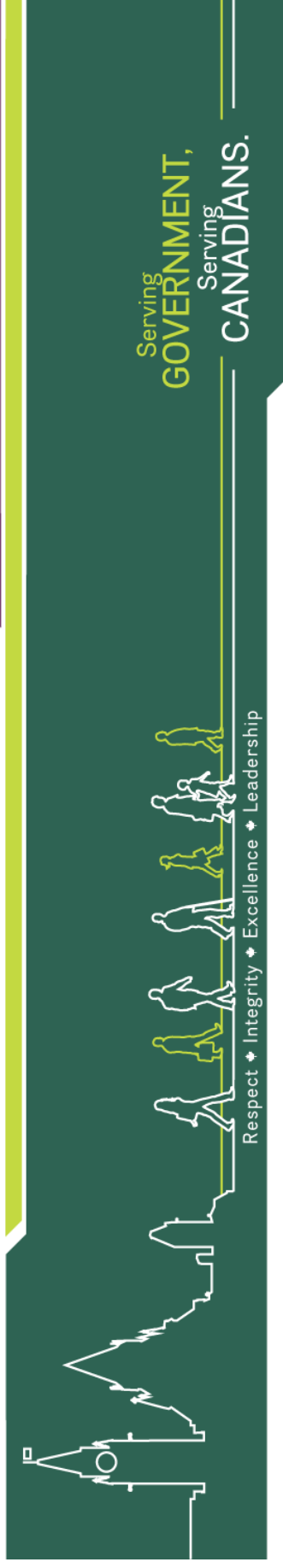


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# Closing Remarks





## **Medium Support Vehicle System (MSVS) Project**

### **Standard Military Pattern (SMP) Vehicle**

**Bidders' Conference**  
Carson City, Nevada, USA  
February 15, 2012



Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

**Canada**

# Logistics

- Exits and emergency exits
- Washroom locations
- Smoking is only permitted outside the building
- Language
- Cameras, videos or any other recording device are not permitted



# Opening remarks

PWGSC (Introduction)

**Maryanne McMillan**  
*SMP Contracting Authority*

DND (MSVS Overview)

**Stéphane Siegrist**  
*MSVS Project Manager*

**LCol Tim Hall**  
*MSVS Project Director*

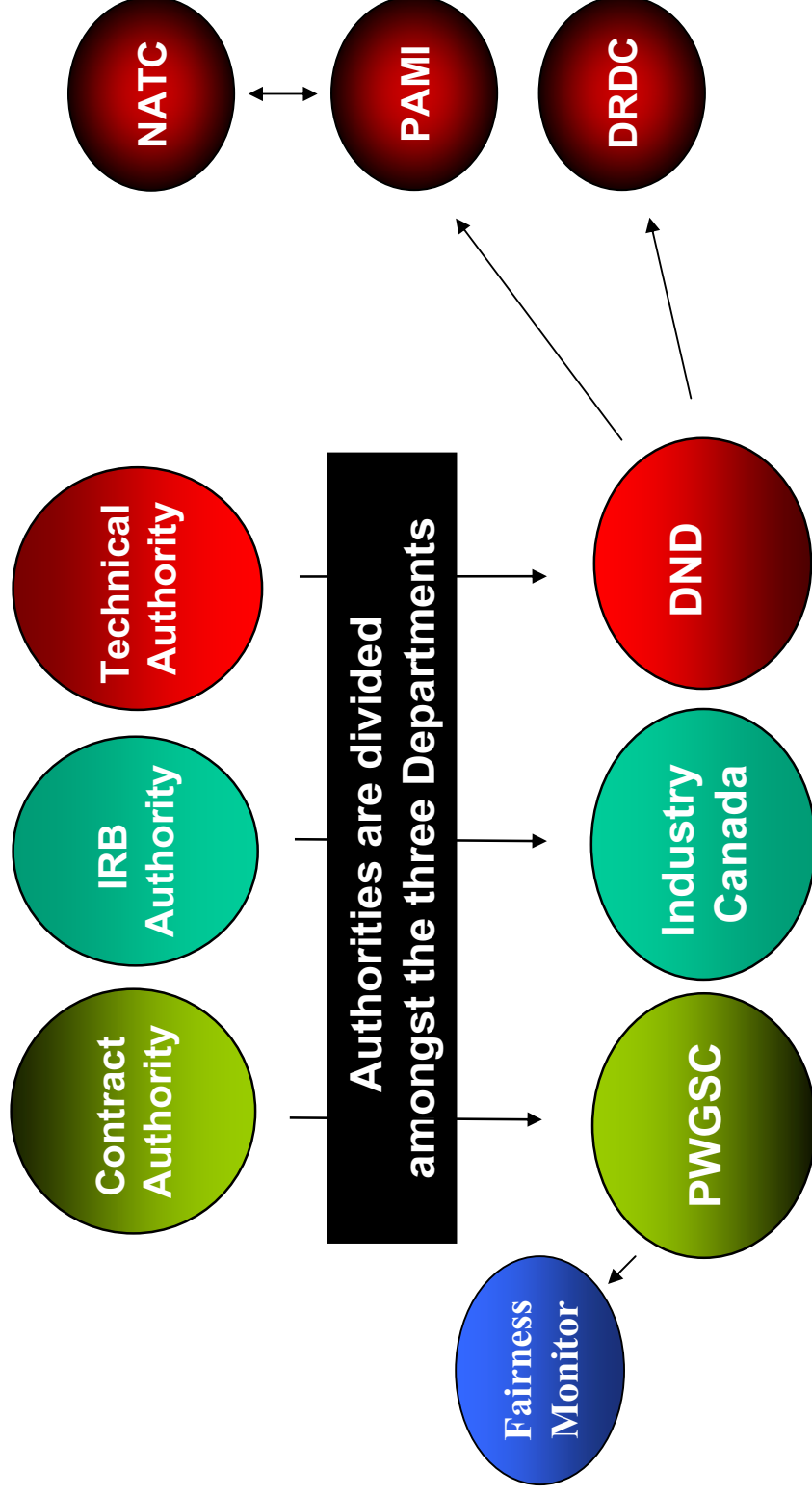


# Objective of Bidders' conference

- To provide an overview of the requirement identified in the Request For Proposal (RFP) W8476-06-MSMP/J for the Medium Support Vehicle System Project (MSVS) Standard Military Pattern (SMP)
- This event and all presentations are unclassified
- In the event of discrepancy, even when published on MERX, the content of this presentation does not supersede the contents of the Request for Proposal published on MERX



# Roles and responsibilities



# Bidders Roles and Responsibilities

- Direct any concerns/clarification to the Contracting Authority
- Not to engage any discussions related to the SMP RFP with anyone else than the Contracting Authority
- Formulate questions in a most honest, fair and comprehensive manner

## SMP Schedule

- RFP posted on GETS (Merx): December 16<sup>th</sup>, 2011
- RFP closing date (Proposal(s) Received): April 25, 2012 at 14:00 Eastern Daylight Savings Time
- Evaluation Completed (anticipated): September 2012
- Contract Award (anticipated): Early 2013
- First Delivery (anticipated): Spring 2014
- Final Delivery (anticipated): Fall 2015



- Bidders' conference Q&A's process
  - Write the questions on the cards provided
  - Provide all questions into the box provided for this purpose

**Bidder name:**

RFP Reference			Bidders' conference Question
Part (1 to 8)	Article	Attachment	

# Questions and Answers process

- Bidders' conference Q&A's process
  - Questions answered at this Bidders' conference will not be binding until they are posted as an amendment to this solicitation on MERX

*Example of Bidders' conference published Q&A's on Merx:*

Standard Military Pattern (SMP) No. W8476-06-MSMP/J				
Attachment # x to RFP Amendment # x				
Questions and Answers (Set # x)				
Q #	RFP Reference		Bidder Question	Response
	Part (1 to 8)	Article	Attachment	
BC1	x	x	x	As per Bidders' Conference: 123 Revised response: 321
BC2	x	x	x	As per Bidders' Conference: 456

# Agenda

- **08:30 PWGSC Opening remarks**  
Maryanne McMillan, Contracting Authority, PWGSC
- **08:35 DND Opening remarks – MSVS Overview**  
Stephane Siegrist, Project Manager MSVS, DND  
LCol Tim Hall, Project Director MSVS, DND
- **08:45 SMP Request For Proposal**  
Presenter: Sébastien Prévost, Supply Team Leader, PWGSC
- **09:30 Technical Requirement**  
Presenter: Dan Mrzena, System Engineering Manager, DND
- **10:00 Break**
- **10:30 Integrated Logistics Support (ILS)**  
Presenter: LCol Nishika Jardine, ILS Manager, DND

# Agenda

- 11:00 Industrial and Regional Benefits (IRB)

Presenter: Bryan Dalphy, Senior Manager, IC

- 11:30 Questions
- 12:00 Lunch
- 13:30 Answers where possible
- 14:00 Closing Remarks

Maryanne McMillan, Contracting Authority, PWGSC





# Solicitation Overview

- Part 1 – General Information
- Part 2 – Bidder Instructions
- Part 3 – Bid Preparation Instructions
- Part 4 – Evaluation Procedures and Basis of Selection
- Part 5 – Certifications
- Part 6 – Security, Financial, and Other Requirements
- Part 7 – Resulting Contract – Acquisition
- Part 8 – Resulting Contract – ISS



## Part 1 – General Information

- The Department of National Defence (DND) has a requirement to replace its current Medium Logistic Vehicle, Wheeled (MLVW) fleet and associated systems
- The requirement under this RFP includes:
  - a) The acquisition of the Standard Military Pattern (SMP) Vehicles, Armour Protection Systems (APS), Trailers with associated systems component and equipment and ILS
  - b) The procurement of long term In-Service Support (ISS) for the SMP fleet



## Part 2 – Bidder Instructions

- Article 1.2: Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract
- Sign their proposal
- Provide required certifications (Part 5)
- Bids must be submitted only to PWGSC Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation
- Release of Classified Reference Values to Bidders
- Delivery of Classified Information in the Bids



# Questions and Answers process / Communication Enquiries

- Except for questions as per Today's Bidders' conference Q and A's, all questions IAW the RFP must be submitted by e-mail to:  
**[NCR.MSVS@tpsgc-pwgsc.gc.ca](mailto:NCR.MSVS@tpsgc-pwgsc.gc.ca)**
- This is done to:
  - protect confidentiality of the originator
  - have a precise record of all questions
  - allow Project Team to prepare answers
- All questions and answers will be published on MERX along with any changes to the RFP resulting from questions
- All enquiries must be submitted in writing to the Contracting Authority no later than 21 calendar days before the bid closing date

## Part 3 – Bid Preparation Instructions

- Canada requests that bidders provide their bid in separately bound volumes as follows:
  - Volume 1 – Executive Summary and Contractual Agreement (SMP Acquisition and SMP ISS)
  - Volume 2 – Technical Proposal – Acquisition
  - Volume 3 – Technical Proposal – ISS
  - Volume 4 – Financial Proposal
  - Volume 5 – Industrial and Regional Benefits (IRB) – Acquisition
  - Volume 6 – Industrial and Regional Benefits (IRB) – ISS

## Part 3 – Bid Preparation Instructions

- General Instructions for Bid Preparation (as requested):
  - Demonstrate your understanding of requirements
  - Demonstrate your capability and describe your approach in a thorough, concise and clear manner
  - Explain how each requirement is met or provide reference to its response in your proposal
  - Address and present topics in the order of the evaluation criteria of the requirement under the same headings

# Part 3 – Bid Preparation Instructions

## Volume 1 – Executive Summary and Contractual Agreement :

- Article 2.1.1: This volume serves as a stand-alone overview of the Bidder's plan to produce, deliver and support the SMP Vehicle, Trailers and Armour Protection System for the duration of the life of the vehicle.
- Bidders should provide:
  - Identity
  - Background, team's capability and experience
  - Description of project management team and key personnel
  - And other administrative documents and information



## Part 3 – Bid Preparation Instructions

### Volume 2 and 3 – Technical Proposal, Acquisition/ In-Service Support (ISS)

- Article 2.2.1: These Volumes will be used to determine the compliance to Part 7, Annex B and associated appendices and Part 8, Annex B and associated appendices.



# Part 3 – Bid Preparation Instructions

## Volume 4: Financial Proposal

- Article 2.3.1: This Volume will be used to perform the financial evaluation of Part 7 and Part 8.
- Article 2.3.2: Bidders must submit their Financial Proposal by completing the following:
  - a) Part 4, Attachment 3, ISS Financial Evaluation
  - b) Part 4, Attachment 4, Acquisition Scenarios Financial Evaluation
  - c) Part 7, Annex C, Table 1-1 and Table 5
  - d) Part 8, Annex C, Appendix 1, Table 1 and Table 2
  - e) Part 8, Annex C, Appendix 4, Table 3a
  - f) Part 8, Annex C, Appendix 6, Table 1

## Part 3 – Bid Preparation Instructions

### Volume 5: Industrial and Regional Benefits (IRB) Acquisition

### Volume 6: Industrial and Regional Benefits (IRB) ISS

- These volumes will be used to determine compliance with the IRB describe in Annex F of Part 7 and Annex F of Part 8
- More information to follow in IRB presentation



## Part 4 – Evaluation Procedures and Basis of Selection

- Defines the process and methodology to be followed for the evaluation of proposals provided in response to this RFP
- The maximum funding available for Tables 1 and 4 of Annex C to Part 7 – Acquisition Contract resulting from the bid solicitation is \$725,000,000.00 CDN
- Evaluation Process
  - Clarifications
  - Proposal Evaluation
  - Financial Evaluation
  - Evaluation Method

## Part 4 – Evaluation Procedures and Basis of Selection

### Evaluation Method

#### STEP 1: Initial Screening

- Review of proposals to ensure compliance to Part 3 – Bid Preparation Instructions
- Bids that do not provide the information requested in Part 3 may be given no further consideration.



## Part 4 – Evaluation Procedures and Basis of Selection

### Evaluation Method

#### STEP 2: Bid Evaluation

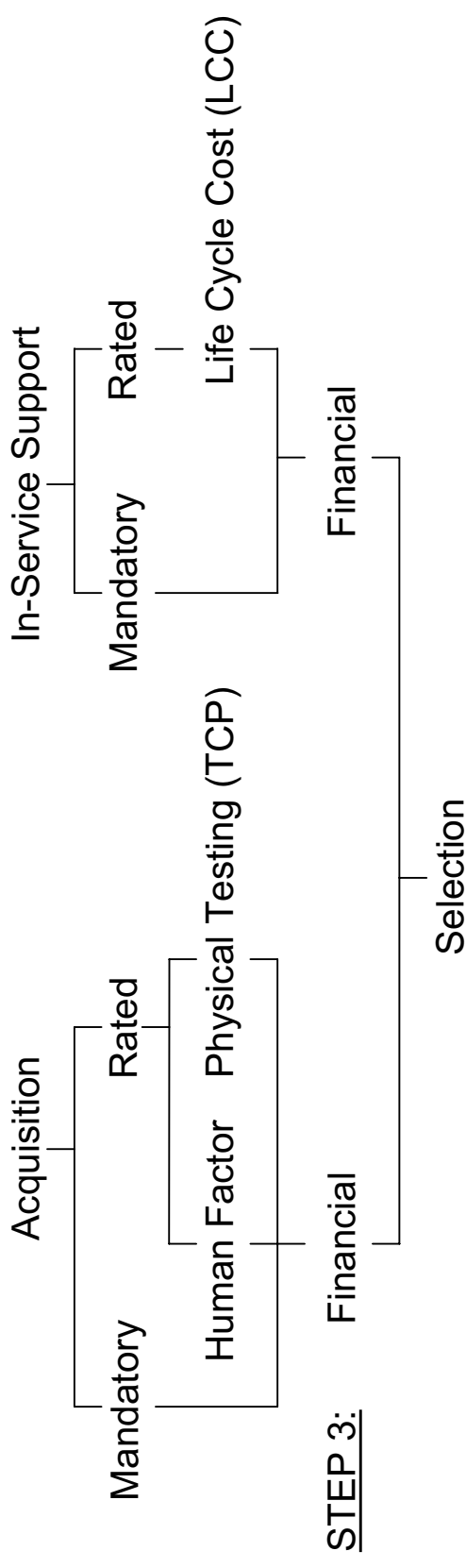
- Mandatory Evaluation Criteria (STEP 2a)
- Point Rated Evaluation Criteria, Physical Testing (TCP), and Life Cycle Cost (STEP 2b)



# Part 4 – Evaluation Procedures and Basis of Selection

## Evaluation Method / Technical

### STEP 2: Bid Evaluation





## Part 4 – Evaluation Procedures and Basis of Selection

### Evaluation Method

#### STEP 3: Financial Evaluation Criteria

- Acquisition Financial Scenarios (STEP 3a)
- Total Evaluated Bid Price (STEP 3b)

The Bidder's Total Evaluated Bid Price will be determined as follows:

Total Evaluated Bid Price = (sum of the SMP Acquisition Tables) + ((sum of the SMP ISS Tables) x 4)

## Part 4 – Evaluation Procedures and Basis of Selection

### Evaluation Method

- Contractor Selection Method
  - Technical Score
  - Cost Score
  - Best Value : A Responsive bid that has not achieved the Highest Overall Score may be recommended for award if:
    - (a) its technical score is within 5.00% of the technical score of the Responsive bid with the Highest Overall Score, **and**
    - (b) its Total Evaluated Bid Price (IAW 3.3.2 above) is at least 10.00% lower than the total evaluated bid price of the Responsive bid with the Highest Overall Score.

# Part 4 – Evaluation Procedures and Basis of Selection

## Evaluation Method

Figure 2.

Bid Price (in \$M)									
		Acquisition	Acquisition	Acquisition Total	ISS	ISS outward years	Total Evaluated Bid Price	sensitivity factor	Total Adjusted Bid Price
Bidders	Bids	(a)	(b)	(a) + (b)	(c)	(c) x four	(A)+(B)	(C)	(C)-(D)
A	A1	700	20	720	407	1628	2348	704.8	1643.2
	A2	680	12	762	250	1000	1762	704.8	1057.2
D	D1	725	21	746	475	1900	2646	704.8	1941.2
F	F1	720	25	745	528	2112	2857	704.8	2152.2

"Cost Calculation"

"Adjusted"

"Cost Calculation"

"Adjusted"

# Part 4 – Evaluation Procedures and Basis of Selection

## Evaluation Method

Figure 3.

Bidders	Bids	Total Adjusted Bid Price (C)-(D) (E)	Cost Score (30%)	Technical Score (70%)	Overall Score	Total Ev. Bid Price at least 10% lower than Highest Overall Score Bid	Technical score no less than 5% lower than Highest Overall Score Bid	recommended for award
A	A1	1643.2	19.3014	64.1356	83.4370	yes	yes	yes
	A2	1057.2	30.0000	43.2578	73.2578	yes	no	no
D	D1	1941.2	16.3383	67.5112	<b>83.8495</b>	n/a	n/a	no
F	F1	2152.2	14.7365	65	79.7365	no	yes	no
					"Best Value"			
			"Cost Score"					

## Part 5 – Certifications

- Bidders are requested to submit the following Certifications:
  - Federal Contractors Program Certification
  - Conflict of Interest
  - Certification Requirement – Code of Conduct for Procurement
  - Employment Created or Maintained
  - Team Stability
- Should be submitted with bid

## Part 6 – Security, Financial and Other Requirements

- Security Requirement
- Financial Capability Requirement
- Controlled Goods Requirement (for work done in Canada)
- Insurance Requirements



## Part 7 – Resulting Contract – Acquisition

- Terms and Conditions
- Annex A – Security Requirement Check List (SRCL)
- Annex B – Statement of Work (SOW)
- Annex C – Price and Delivery
- Annex D – 2030 (2011-05-16) General Conditions – High Complexity – Goods
- Annex E – 4006 (2011-08-16) Supplemental Requirements
- Annex F – Industrial and Regional Benefits Requirements (IRB)
- Annex G – Certificate of Defence Supplies
- Annex H – Forms
- Annex I – Acceptance Procedures



## Part 8 – Resulting Contract – ISS

- Terms and Conditions
- Annex A – Security Requirement Check List (SRCL)
- Annex B – Statement of Work (SOW)
- Annex C – Price and Delivery
- Annex D – Task Authorization Procedures
- Annex E – Spare Parts Ordering Procedures
- Annex F – Industrial and Regional Benefits Requirements (IRB)
- Annex G – Certificate of Defence Supplies
- Annex H – Forms
- Annex I – 2035 (2011-05-16) General Conditions – High Complexity - Services
- Annex J – 4006 (2011-08-16) Supplemental General Conditions – High Complexity - Services



# **Medium Support Vehicle System (MSVS) Project**

## **Standard Military Pattern (SMP)**

### **MSVS SMP Bidder's Conference**

February 15, 2012

Carson City, Nevada, USA

Technical Requirements Presentation

Dan Mrzena



## **SMP Technical Requirements Agenda:**

- - MSVS SMP Variants
- - Mobile Repair Truck (MRT) Variant
- - Payload
- - Payload Centre of Gravity
- - Payload Graph
- - Country of Origin
- - Technical Data and Capacities Table
- - Armour Protection System – Third Party Test Report



## **MSVS SMP Vehicle Variants**

Configuration A – Cargo Variant

Configuration B – Cargo with Crane Variant

Configuration C – Gun Tractor Variant

Configuration D – Load Handling System Variant

Configuration E – Mobile Repair Team (MRT) Variant



## Mobile Repair Truck (MRT) Variant

- The MRT Variant is based on the Cargo with Crane Variant
- MRT Variant requirements are located in Part 7, Annex B, Appendix BA, Attachment BA-14.
- The main differences between the MRT Variant and Cargo with Crane Variant are:
  - Sideboards
  - Cargo Deck Access Points
  - Superstructure and Tarp Assembly



# Payload

## Requirements (Part 7, Annex B, Appendix BA):

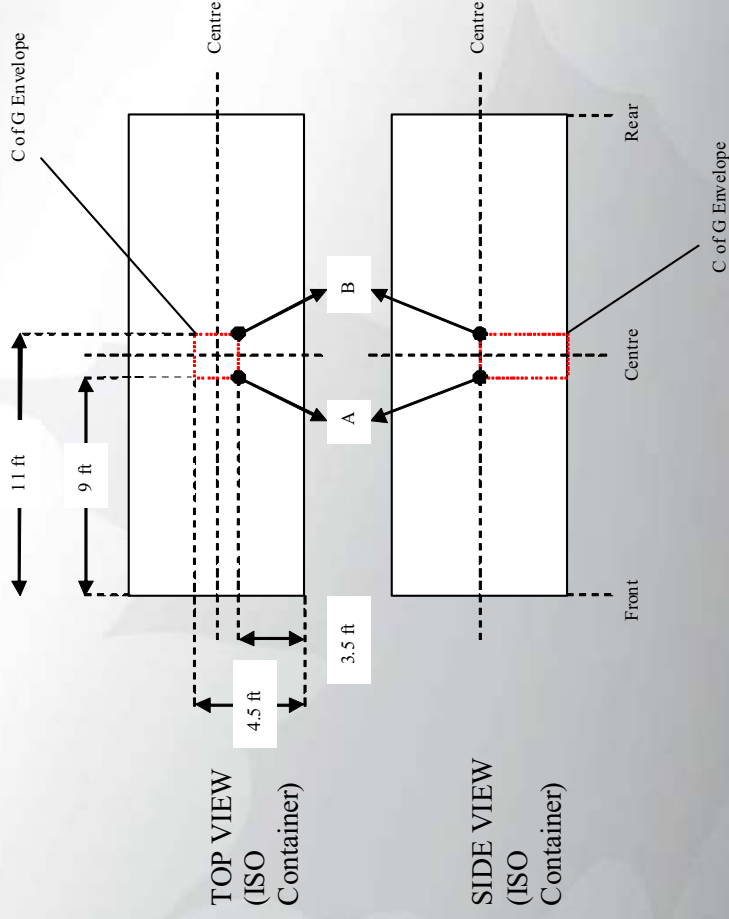
- The Vehicle loaded to GVW shall carry a minimum payload of 8,000 kg. (Part 7, Annex B, Appendix BA, Attachment BA-103)
- The Vehicle shall have a maximum steering axle weight of 9000 kg at GVW. (Part 7, Annex B, Appendix BA, Attachment BA-625)

## Important Definitions (Part 7, Annex B, Appendix BH):

- Gross Vehicle Weight (GVW) – Curb weight, plus APS, plus vehicle payload
- Curb Weight (CW) - The Vehicle weight in operational status with no payload, a full fuel tank, all fluids, lubricants, coolant, ancillary equipment (as applicable by variant - including winch, crane, LHS and container interface equipment), **standard kit and equipment and crew** (as defined in Appendix BA, Attachment BA-1).

# Payload Centre of Gravity

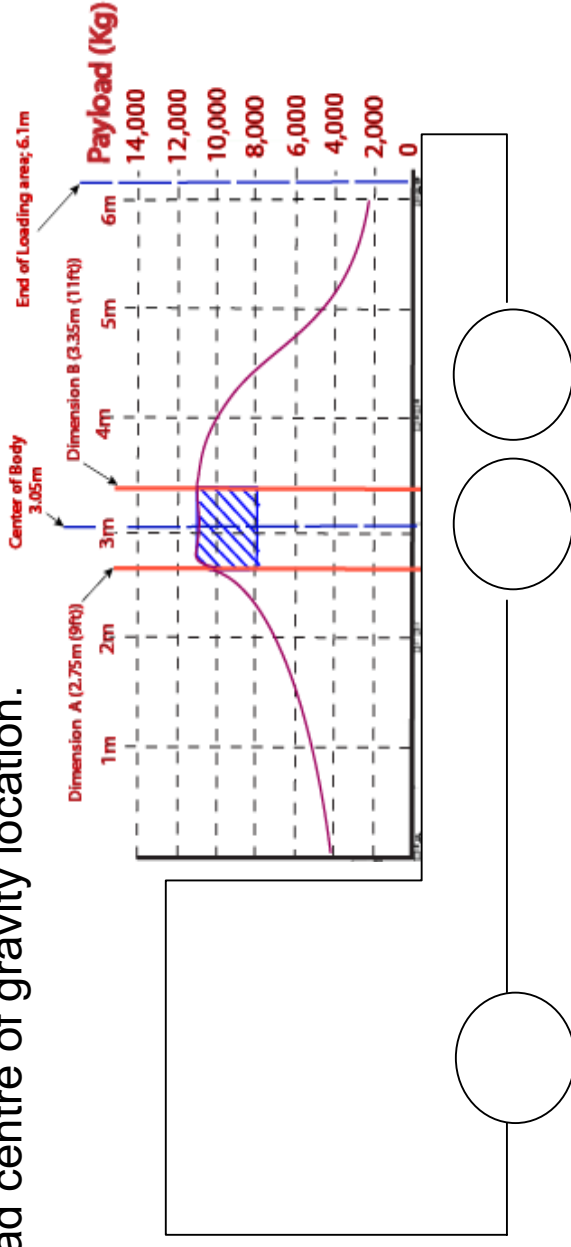
- The Vehicle loaded to GVW shall accommodate a payload centre of gravity (C of G) everywhere within the C of G envelope identified at Schedule BA-1 (using a 20 ft ISO container as the payload) (Part 7, Annex B, Appendix BA, Attachment BA-681)





# Payload Graph

- Sample provided in Part 7, Annex B, Appendix BA, Schedule BA-1
- This graph should plot the maximum allowable payload as a function of the payload centre of gravity location.



- In this example, the payload varies between 8000 kg and 11 000 kg within the envelope of the C of G, and thus is shown greater than the mandatory requirement of 8 000kg.





# Country of Origin

- The Vehicle shall conform to applicable country of origin laws, regulations and industry standards governing manufacture, safety, and noise levels, unless specified otherwise. (Part 7, Annex B, Appendix BA, Attachment BA-102)

## EXAMPLE 1 – Country of Origin is not acceptable

- The Vehicle shall ford a water obstacle to a depth of 750mm without preparation IAW STANAG 2805. (BA-436)

## EXAMPLE 2 – Country of Origin is acceptable

- The Vehicle shall be equipped with Type III external, rear-view mirrors IAW A-A-52432A or applicable country of origin laws, regulations, and industry standards. (BA-174)



# Technical Data and Capacities Table

- RFP location – Part 3 Bid Preparation Instructions, Attachment 4
- The Technical Data and Capacities Table is a mandatory submission

EXAMPLE...

Rated Requirement Reference ID	SMP - Attachment 4 - Technical Data and Capacities Table	Bidder Response	Bidder's Value
	Tire Model Number	N/A	
	<b>3 Vehicle Rated Requirement Commitment</b>	N/A	N/A
BA-37	<b>3.1 Vehicle Payload</b>	N/A	N/A
BA-486	Vehicle Payload		
	<b>3.2 Performance</b>	N/A	N/A
BA-514	Acceleration time, from 0 km/h to 80 km/h at GVW	N/A	N/R
BA-120	Maximum speed	N/A	N/R
BA-526	Emissions - particulate matter		
BA-636	Emissions - Nitrogen Oxide		
BA-634	Operate on F-34 fuel without preparation		N/A
BA-528	Mean Maximum Pressure (MMP)	<b>YES</b>	<b>400 kPa</b>



## Armour Protection System – Third Party Test Report

Table C1: Summary of survivability requirements and assessment methodology.

Object	Item	Level	Requirement Type	Assessment Methodology
BA-6-7	Ballistic	STANAG Level 3-partial	Mandatory	AEP-55 Vol 1
BA-6-12	Ballistic	STANAG Level 4-partial	Rated	AEP-55 Vol 1
BA-6-8	Blast Mine	Level 2a	Mandatory	AEP-55 Vol 2
BA-6-67	Blast Mine	Level 2b	Mandatory	AEP-55 Vol 2
BA-6-13	Blast Mine	Level 3a	Rated	AEP-55 Vol 2
BA-6-68	Blast Mine	Level 3b	Rated	AEP-55 Vol 2
BA-6-73	IED – Side Fragmentation	Road side artillery device	Rated	Schedule BA-6-1
BA-6-74	IED – Side Blast	Vehicle borne IED	Rated	Schedule BA-6-1

**Third Party:** A recognized governmental authority or private entity which is completely outside of the bidding company or joint venture and qualified to conduct the required testing and/or analysis. (Part 7, Annex B, Appendix BH, Attachment BH-671)

**Example:**

Bidder A, and sub-contractors B,C,D

Third Party = Governmental Authority or Company E.



# MEDIUM SUPPORT VEHICLE SYSTEM STANDARD MILITARY PATTERN

*Integrated Logistics Support  
& In-Service Support*

*ILS Presentation to Bidders' Conference*

*15 Feb 2012*

*Lieutenant-Colonel Nishika Jardine*



## **Aim**

Review the Integrated Logistics Support  
and In-Service Support Contract  
requirements for the Vehicle, Armoured  
Protection System and Trailer (“vehicle  
fleet”) as detailed in the SMP Request For  
Proposal



## **Scope**

- **Integrated Logistics Support Deliverables**  
( RFP Part 7 – Acquisition)
- **In-Service Support Contract**  
(RFP Part 8 – In Service Support)



## **Integrated Logistics Support (ILS)**

Standard ILS deliverables as part of an equipment acquisition, for example:

- Logistics Support Analysis
- Technical Documentation Program, etc

Some elements are **planned** under Acquisition Contract but **delivered** under the ISS Contract:

- Supply Support (Parts Provisioning Plan/Lists)



## **In-Service Support (ISS)**

Support Concept for the Fleet:

Support will be provided jointly between DND/Canadian Forces and the Contractor, with clearly defined roles for each.

Essentially, **CF will conduct Level 1 and 2** preventive and corrective maintenance (repair/replace parts or assemblies that can be completed within ~ 24 hours), and the **Contractor will conduct Level 3 (Repair & Overhaul) and Level 4 (Major Repair)**.





## **In-Service Support (ISS)**

Long-Term, Performance-Based (Incentivized) Service  
Contract for the life of the Fleet

Responsibilities (generally):

	<b>DND</b>	<b>Contractor</b>
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>• Level 1 &amp; 2</li> </ul>	<ul style="list-style-type: none"> <li>• Level 3 &amp; 4</li> </ul>
<b>Supply</b>	<ul style="list-style-type: none"> <li>• Procure and stock Spare Parts to conduct Level 1 &amp; 2 repairs</li> </ul>	<ul style="list-style-type: none"> <li>• Timely (measured) Deliveries (of parts, repaired equipments)</li> </ul>
<b>Technical/ Engineering</b>	<ul style="list-style-type: none"> <li>• Life Cycle Management</li> </ul>	<ul style="list-style-type: none"> <li>• Field Service Reps</li> <li>• Engineering Support</li> </ul>
<b>Training</b>	<ul style="list-style-type: none"> <li>• Ab-initio</li> <li>• Conversion</li> <li>• Steady State</li> </ul>	<ul style="list-style-type: none"> <li>• Familiarization</li> <li>• Initial Cadre</li> </ul>



## **In-Service Support (ISS)**

### Contract - Service Requirements:

- Project Management (incl performance management)
- Supply Support (delivery of parts/repairs eqpt)
- Technical Support (field service reps)
- Engineering Support
- Environmental Health and Safety Management
- Electronic Information Environment



## **In-Service Support (ISS)**

Incentivized Performance - Concept:  
Five Performance-Based Metrics, each measured to derive a  
computed Performance Score (***S<sub>i</sub>***).

Scores are weighted (***W<sub>i</sub>***) and added to derive a ***Composite  
Performance Score*** between -1 and +1.

***CPS*** is used to determine the percentage of the Incentive/Disincentive  
payment.

Maximum Incentive/Disincentive payment is +/- 6% of the ***Yearly  
Management Fee***



## **In-Service Support (ISS)**

Calculation:

PBM 1: Project Mgmt Qualitative Survey →S1

PBM 2: Project Mgmt Quantitative Survey →S2

PBM 3: Spares Delivery Mgmt →S3

PBM 4: Repair and Overhaul Mgmt →S4

PBM 5: Major Repair Program Mgmt →S5

$$CPS = W1xS1 + W2xS2 + W3xS3 + W4xS4 + W5xS5$$

- if  $CPS = 0.26$ , Incentive =  $6\% \times 0.26 \times YMF$
- if  $CPS = -0.12$ , Disincentive =  $6\% \times -0.12 \times YMF$



## **In-Service Support (ISS)**

Scheme of Manoeuvrre:

- First year of measurement in **Year 4** (dry run)
- **Year 5** incentive will be Award of option period
- **Year 6+:** Annual Incentive/Disincentive Payments and Assessment of performance towards award of future option periods



## **Summary**

- Acquisition of the vehicle fleet includes standard **In-Service Support Contract** is for long-term, Performance-based (incentivized) support to the vehicle fleet

## Canada's Industrial and Regional Benefits Policy

# Medium Support Vehicle System Standard Military Pattern Trucks

**Bryan P. Dalphy**  
**Senior Manager**

Industrial & Regional Benefits Directorate  
Industry Canada  
Carson City, Nevada  
February 15, 2012



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# Canada's IRB Policy

- **Description Of The IRB Policy**
- **The IRB Process**
- **Changes to the Policy**
- **Preparing an IRB Transaction Sheet**





# Canada's IRB Policy

- Framework for using federal procurement to lever long-term industrial and regional development
- Contractors are required to undertake business activities in Canada valued at 100% of the contract value
- IRB business activities can be Direct or Indirect
- Key IRB objectives include:
  - good business sense
  - advanced technologies
  - long-term sustainability
  - global value chains
  - R&D



# IRB Principles

- **Client Driven**
  - Client Department operational requirements priority
  - The IRB Policy independent from operational requirements
  - The IRB Policy does not enter into technical or financial review
- **Market Driven**
  - IRB transactions must be market driven
  - IRB Policy sets expectations, but does not prescribe specific recipients, business activities, etc.



## IRB Objectives

- **The IRB Policy leverages long-term industrial and regional development through:**
  - Canadian industry access to export markets
  - Promoting transactions with lasting economic value and high quality technology



## IRB Transaction Types

### **Direct:**

- “Direct IRB Transactions” are IRB transactions containing work performed “directly” related to the product or service that the Government is procuring.

### **Indirect:**

- “Indirect IRB Transactions” are work packages proposed by the prime contractor that meet the IRB Eligibility Criteria; however, the goods or services procured will support the prime contractor’s other activities



# Types of Indirect IRB Transactions

- **Purchase of goods or services from a Canadian high technology company**
  - Transactions are measured in Canadian Content Value
- **Investments in post-secondary institutions and non-profit research and development institutions**
  - Transactions are eligible for up to a five times multiplier
- **Investments made directly with a Canadian company**
  - Transactions are calculated using the future sales resulting from the investment
- **Investments made to Venture Capital Funds (VCF)**
  - Transactions are eligible for up to a five times multiplier once the VCF has invested in Canadian companies



## IRB Eligibility Criteria

- **Causality** – Benefits must be brought about due to the IRB obligation to Canada
  - The work may not have been placed in Canada otherwise
- **Timing** – Benefits must be completed within the contract period
  - Achievement period commences after June 27, 2006
- **Incrementality** – Benefits must be new work to Canada
- **Eligible Parties** – Benefits must be completed by either the OEM's themselves or their major Tier 1 suppliers





## IRB Eligibility Criteria

- **All IRB Commitments are measured in Canadian Content Value (CCV)**
  - Only Canadian labour and parts are counted towards obligations
  - The minimum acceptable CCV is 30% for an indirect transaction
- **Benefits must be high technology and sustainable in nature**
  - Technology level must be equivalent to or greater than the products or services being procured by the Government of Canada



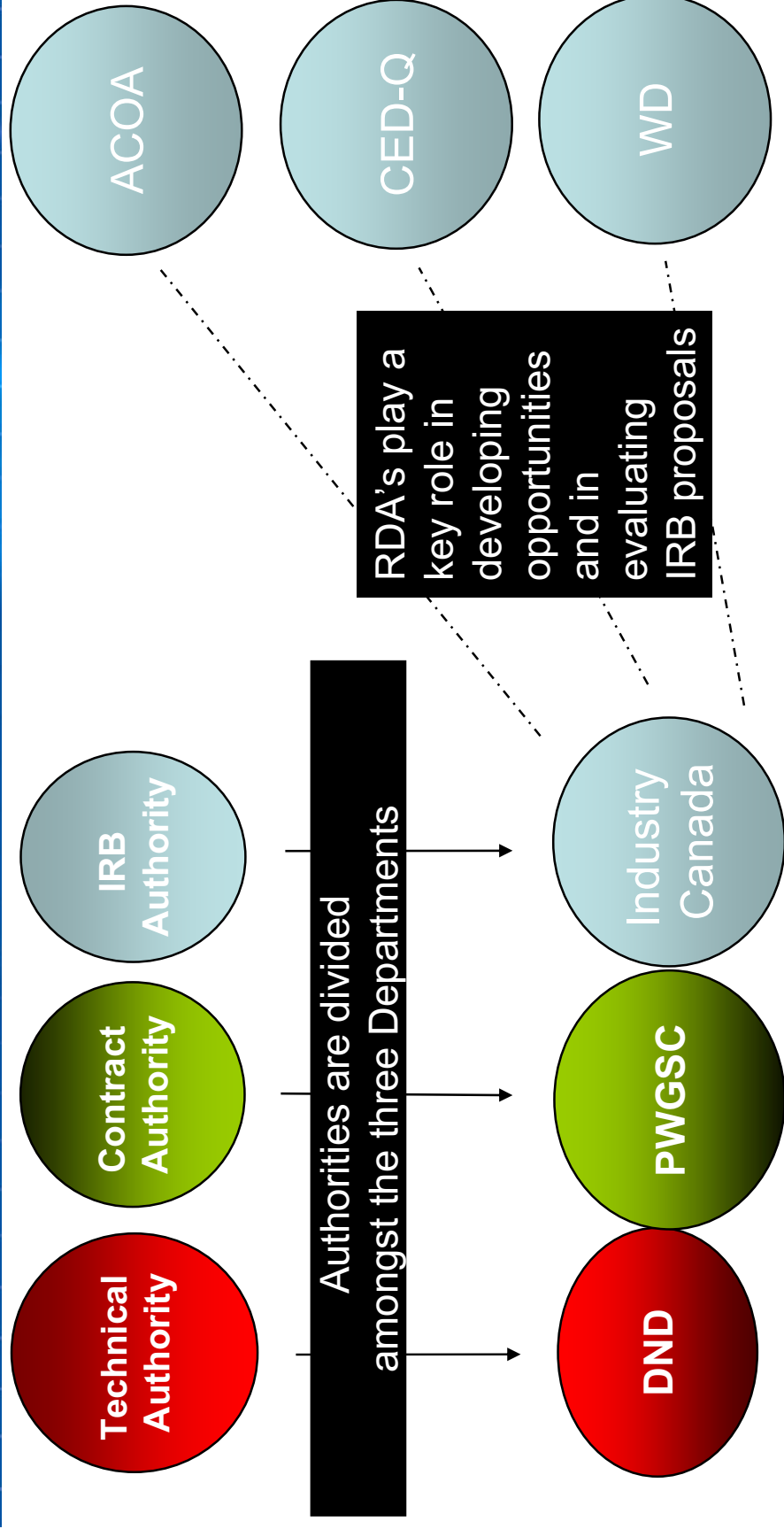
# Canada's IRB Policy

- Description Of The IRB Policy
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- Preparing an IRB Transaction Sheet





# Major Procurement Players



## IRB Proposal

- **Bidder must submit an IRB Proposal with their bid containing the following seven mandatory elements:**
  - IRB Proposal must equal a minimum of 100% of the bid price, measured in Canadian Content Value
  - Identify acceptable IRB Transactions equal to a minimum of 30% of the bid price at bid closing (commit to identify more later, at specified time intervals)
  - Commit to a minimum 20% of Direct IRB Transactions for the Acquisition contract and a minimum 35% of Direct IRB Transactions for the In-Service Support contract
  - Accept liquidated damages and stop payments
  - Achieve minimum point score for both IRB Plans and IRB Transactions
  - Accept IRB Terms and Conditions
  - Include all requested IRB Plans, IRB Transaction Sheets, and the IRB Compliance Checklist



## Minimum Direct IRB Requirements

- **Minimum Direct IRB Requirements:**
- **Acquisition contract: 20%**
- **In-Service Support contract: 35%**



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## Evaluation of IRB Proposals

- **Industry Canada evaluates the IRB Proposal**
  - with the Regional Development Agencies
- **IRB proposals are evaluated on a pass/fail basis only**



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# The Contract

- **The Contract includes specific IRB commitments**
- **Annual reviews of achievements are performed by Industry Canada during the performance period**
  - Prime Contractor reports achievements annually
  - Industry Canada verifies achievements
- **Liquidated Damages are applied for non-compliance**



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# Canada's IRB Policy

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# Changes to the IRB Policy

**In September 2009, Industry Canada announced seven enhancements to the IRB Policy to maximize the benefits from planned future defence procurements.**

Previous	Change	Effective Date
60% identified prior to contract award	30% identified prior to contract, additional 30% one year after contract award	Implemented
Lack of mechanism to encourage Consortia	Encourage Consortia through multipliers	Implemented
Limited recognition of Global Value Chains	Improved recognition of participation in Global Value Chains	Implemented
Lack of Strategic Plans for IRB	Request Strategic Plans from major Prime Contractors	Implemented
No Banking of IRB Credits	Limited form of Banking IRB Credits	Implemented
Limited use of Key Technology List	Enhance the Priority Key Technology List	implemented
Lack of recognition of firm level R&D activities	Improve recognition of firm level R&D activities	To be implemented



# Phase in 60% Upfront Requirement

- Previous Approach:** 60% of bid price required of all bidders at bid submission
- Balance of 40% over remaining contract period

- New Approach:** 30% of bid price required at bid submission
- 30% required one year after contract award
  - Balance of 40% over remaining contract period

## **Benefits**

- Reduce cost of bid preparation
- Reduce bid price
- Reduce adverse effects arising during short contracting processes
- More time to identify and negotiate high-value-added transactions
- Leverage media visibility at time of contract award

- **Practice in place since Dec. 2009**





# Incent Public-Private Consortia

**Previous Approach:** Limited use of multipliers to incent R&D and Technology Development

**New Approach:** Provide multipliers for investment in multiparty consortia

- 5X multiplier for investment into consortia
- Provide multiplier credit for matching Canadian industry investment
- Consortium: Canadian industry, publicly funded R&D institution

## **Benefits**

- Leverage broad scope of publicly funded R&D capabilities in Canada
- Provides foundation for centres of excellence and incubators for business development

- **Practice in place since Dec. 2009**



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# Participation in Global Value Chains (GVC)

**Previous Approach:** Limited scope for direct offset requirement

**New Approach:** Leverage direct requirement to create new business

- In the event of direct requirements, credit Canadian work done on global platforms (similar to those being acquired by Canada) against direct offset requirements
- Criteria: global platforms should provide opportunity equal to or larger than opportunity provided under the

## **Benefits**

- Increase participation in global supply chains
- Increased industrial development and export opportunities
- Significantly reduce unintended consequences when direct offset requirements are applied

- **Practice in place since June 2010**



# Strategic Plans from Major Prime Contractors

## Prior Approach: Offset obligations managed at project level

- Majority of offset obligations (>50%) held by four obligors

## New Approach: Strategic planning of national offset activities

- Require corporate strategic plans from prime contractors with major corporate obligations to Canada (>C\$1B)
- Prime contractors will be required to identify and meet a portion of its corporate IRB obligations through the plan
- Will permit “pooling” of corporate offset activities in return for corporate-level engagement and support for the plan

## Benefits

- Leverage corporate offset obligations to develop strategic, larger-scale business development opportunities
- Lead to establishment of national-scale initiatives
- Strengthen strategic relationships between OEMs and Canadian industry, academia and public sector stakeholders
- **Practice in place since June 2010.**



# Banking of IRB Credits

## Previous Approach: No banking

### New Approach: Banking of offset credits will be permitted

- **In advance of award**
  - Limited eligibility period
  - Fixed value for initial years, with gradual depreciation over final years
  - Limited percentage of bid price will be permitted in banked credits
  - Full transferability will be permitted (for a limited number of cycles)
  - Attribution of credit to specific procurement will be requested
- **Banked credits for strategic over-commitments**
  - Provide over-commitment credit for strategic activities
  - Full transferability

## Benefits

- **Will allow new business opportunities to be secured when they are most likely to arise**
- **Reduce the cost of bid preparation**
- **Attract new business to Canada**
- **Practice in place since September 2010**



# Enhanced Priority Technology List

## Prior Approach: Technology list with broad range of topics and sectors

- Requiring mandatory minimum level of participation
- Limited discrimination and leveraging of other technology-related initiatives and related activities

## New Approach: Demand-driven Priority List

- Enhance Strategic Aerospace and Defence Technology List
- Based on client department technology needs
- Target transformational technologies and services

## Benefits

- Offset policy will leverage client department strategic technology goals and related activities
- Leverage federal and provincial science and technology (S&T) stakeholders
- Business relationships built around future technology-based procurement opportunities

- Practice in place since December 2011





# Firm-Level R&D and Commercialization

## Prior Approach: Multiplier of 5X provided for investment into a Venture Capital Fund

- Limited investment and uptake
- High-quality candidate firms not directly supported due to lack of effective valuation framework

## New Approach: Provide an investment framework to credit prime contractors who invest in long term, innovation-focused activities within Canadian start-up companies

- Credit linked to input (e.g., investment) and output (e.g., value creation)
- Due diligence process similar to other investment instruments
- Limit percentage of offset credit eligible

## Benefits

- Provide Canadian firms with access to technical and business expertise as well as financial support
- Increase R&D activities, market-driven technology development and robust business development approaches
- Establish long term, strategic business relationships between OEMs and emerging Canadian firms



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# Preparing IRB Transaction Sheets

- The preparation of IRB transaction sheets is a key activity in the overall IRB process. Outlined below is some general guidance on preparing certain portions of the IRB transaction sheet
- **Box 7 - Company providing IRB (Donor)**
  - Insert name of the company/division/entity that is actually undertaking the business activity in Canada
  - The IRB Donor must be on the list of Eligible Parties (identified in the bid proposal or contract)
  - There should be only one donor per IRB transaction sheet
- **Box 8 - Company receiving IRB (Recipient)**
  - The company receiving the IRB must be resident and operating in Canada
  - With the exception of federal research institutes, the recipient cannot be a government organization.
  - There should be only one recipient per IRB transaction sheet





# Preparing IRB Transaction Sheets

- **Box 10 - Description of IRB Recipient and IRB Transaction**
  - Describe the IRB recipient in detail, including business history, number of employees, locations in Canada, etc.
  - Provide complete and detailed descriptions of the work:
    - proposed activity (purchase of goods, technology transfer, etc.)
    - location of the work
    - nature of the work (manufacturing, R&D, etc.)
    - quantities and timelines
  - Avoid using generic statements or marketing language
- **Box 12 - Eligibility of IRB Transaction**
  - Be as specific and detailed as possible in addressing each of the IRB Eligibility Criteria. Attach separate, additional sheets as required
  - Submit all details and supporting documentation with the IRB transaction sheet
  - Failure to adequately demonstrate any of the IRB Eligibility Criteria may result in IRB transaction rejection
- **For more information, visit:**  
<http://www.ic.gc.ca/eic/site/042.nsf/eng/00105.html>



# Question period



## Closing remarks



**Thank you**