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REQUEST FOR PRICE AND AVAILABILITY
DEMANDE DE PRIX ET DE DISPONIBILITÉ

This is not a bid solicitation but an inquiry for the purpose of obtaining price and availability information for the goods, services, and construction specified herein. The information requested herein is for budgeting and planning purposes only. Contracts will not be entered into on the basis of suppliers' responses.

Il ne s'agit pas d'une invitation à soumissionner mais d'une demande de renseignements sur les prix et la disponibilité des biens, services et construction spécifiés aux présentes. Les renseignements demandés aux présentes sont nécessaires uniquement à l'établissement du budget et à la planification. Les marchés ne seront pas attribués suite aux réponses des fournisseusr/entrepreneurs.

Comments - Commentaires

Title - Sujet
Land Vehicle Crew Training System

Solicitation No. - N° de l'invitation	**Date**
W8476-175579/A	2017-01-18
Client Reference No. - N° de référence du client	**GETS Ref. No. - N° de réf. de SEAG**
W8476-175579	PW-$$QF-111-26143
File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
111qf.W8476-175579	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2018-04-19

Time Zone
Fuseau horaire
Eastern Daylight Saving Time EDT

F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☑

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Wetscher, Stefan	111qf
Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(819) 956-5772 ( )	(819) 956-5654

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Specified Herein
Précisé dans les présentes

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
See Herein	

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

Telephone No. - N° de téléphone
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Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Issuing Office - Bureau de distribution
Electronics, Simulators and Defence Systems Div.
/Division des systèmes électroniques et des systèmes de simulation et de défense
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Canada

PRICE AND AVAILABILITY

FOR

LAND VEHICLE CREW TRAINING SYSTEM

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General Price and Availability (P&A) Information

The objective of this P&A request is to:

a) Advise industry of this requirement and provide industry with general information on the Land Vehicle Crew Training System (LVCTS) project;

b) Provide industry with an updated preliminary set of high level specifications, deliverables, schedule, and project scope information;

c) Enable Canada to engage industry and obtain updated information regarding LVCTS technology, including detailed, indicative, non-binding cost information for project planning and definition purposes; and

d) Enable Canada to better evaluate and progress towards a possible LVCTS acquisition along with sustainment requirements.

Central Information Hub

As the project progresses towards a potential formal Request for Proposal (RFP) process, this P&A will provide a continuous single point of official communication with industry and allow the project to use the P&A process for multiple purposes such as:

a) To present draft RFP documents to industry and solicit comments and feedback;

b) To collaborate with industry on the procurement strategy, Industrial and Technological Benefits and Value Proposition strategy (if applicable), and technical requirements;

c) To answer questions from industry to ensure all interested participants receive the same information; and

d) To provide project schedule updates.

Assumptions

When providing any information to Canada, it is beneficial for respondents to indicate if assumptions are being made and to identify those assumptions to Canada.

Additional Information Requests

Throughout the P&A process, the Public Services and Procurement Canada (PSPC) Contracting Authorities may request additional information, clarifications or site visits from participating suppliers.

Enquiries

All enquiries and other communications related to this P&A shall be directed exclusively to the PSPC Contracting Authorities. All enquiries must be submitted to the Contracting Authorities no later than fifteen (15) calendar days before the P&A closing date. Enquiries received after that time may not be answered.

Care should be taken by suppliers to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the respondent do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all Suppliers. Enquiries not submitted in a form that can be distributed to all Suppliers may not be answered by Canada.

Changes to this P&A may occur and will be advertised through a P&A amendment on the Government Electronic Tendering System (PSPC Buy and Sell).

Notes to Interested Suppliers

This is neither a call for tender nor a RFP, and no agreement or contract for the procurement of the equipment and / or services stated herein will be entered into solely as a result of this P&A. This announcement does not constitute a commitment by Canada. Canada does not intend to award a contract on the basis of the notice or otherwise pay for the information solicited. Any and all expenses incurred by industry in pursuing this opportunity, including the provision of information and potential visits, are at industry's sole risk and expense.

Any discussions on this subject with project staff representing Department of National Defence (DND) or PSPC, or any other Government of Canada representative, or other personnel involved in project activities, shall not be construed as an offer to purchase or as commitment by DND, PSPC or Government of Canada as a whole.

Although the documents / information / data collected may be provided as commercial-in-confidence and will not be provided to a third party outside of Canada, Canada reserves the right to use the information to assist them in drafting performance specifications and for budgetary purposes. Requirements are subject to change, which may be as a result of information provided in response to this P&A. Suppliers are advised that any information submitted to Canada in response to this P&A may, or may not, be used by Canada in the development of the potential subsequent RFP. The issuance of this P&A does not create an obligation for Canada to issue a subsequent RFP, and does not bind Canada legally or otherwise, to enter into any agreement or to accept or reject any suggestions.

There will be no short-listing of Suppliers for the purposes of undertaking any future work, as a result of this P&A. Similarly, participation in this P&A is not a condition or prerequisite for the participation to any RFP.

Respondents to this P&A should identify any submitted information that is to be considered as either company confidential, proprietary or if the response contains controlled goods.

1. Introduction

1.1. The DND is considering procuring a LVCTS as defined in the High Level Mandatory Requirements (HLMRs) for this capability (Refer to Annex A). The LVCTS project, herein referred to as "the Project", will provide a networked Crew Training System for the Light Armoured Vehicle (LAV) 6.0, the Leopard (LEO) 2, and the Tactical Armoured Patrol Vehicle (TAPV) fleets that enables crew members to train without using real vehicles. It also includes purpose-built facilities to house the system at the following locations: Canadian Forces Bases (CFB) Gagetown; Valcartier; Petawawa; Shilo and Edmonton.

1.2. In 2007, a Letter of Interest was sent to Industry to invite responses to the LAV Crew Training System project. Subsequently, the project scope was expanded twice: in 2010, the training needs of the LEO 2 fleet were included, and in 2015 that of the TAPV. A revised Letter of Interest was sent to Industry in 2011 (reference number W8476-111637/A) and then again in 2015 (reference number W8476-15LVCT/B).

1.3. The purpose of this P&A is to obtain updated P&A information on the LVCTS, associated infrastructure, and follow-on requirements.

1.4. The major infrastructure component, which consists of the sites and the core services, will be costed separately through a third party cost estimate.

1.5. The services and equipment to be obtained and/or procured through Shared Services Canada (SSC) will also be costed separately.

2. Procurement Strategy

2.1. For the acquisition, Canada intends to issue one Request for Proposal (RFP) for both the infrastructure and Training System, utilizing a performance based contracting approach, and to award one contract for the acquisition and one for the sustainment.

2.2. There is no security requirement associated with this P&A. However a possible future solicitation could include a security requirement. A requirement of this scope could require an Enhanced Reliability Clearance (ERC) to perform the work. Canada may provide sponsorship for industries looking to obtain a necessary level of security clearance in relation to a possible future solicitation.

2.3. For the sustainment, Canada is considering an initial five-year sustainment contract, with a rolling wave window and the potential for four subsequent five-year options.

2.4. During the Definition phase of the project the procurement strategy for the acquisition and sustainment, along with the performance management framework, will be refined through various Industry engagements.

2.5. Under the procurement process and any resulting contract regarding the project, the supplier will require access to Canadian Army (CA) doctrine and tactics, techniques and procedures (TTP) that describe in detail how the CA conducts operations, and this information has a national security aspect. As a result, the National Security Exception has been invoked to exempt the procurement of goods and services from the provisions of all of Canada's trade agreements, current and, as applicable, future, including the World Trade Organization - Agreement on Government Procurement (WTO-AGP), Article XXIII(1); the North American Free Trade Agreement (NAFTA), Article 1018(1); the Agreement on Internal Trade, Article 1804; the Canada-Chile Free Trade Agreement, Article Kbis-16(1).

2.6. It is not anticipated that any Comprehensive Land Claim Agreements (CLCA's) would be applicable to any future solicitations, if applicable.

3. Concept of Operations

3.1. General

3.1.1. The Project will deliver a virtual Training System that will provide the CA with the capability to enhance various types of armoured vehicle crew training from individual training for Drivers and Gunners up to collective training for subsection and full Combat Team.

3.1.2. A modern Training System will enable training in a safe and realistic virtual environment that will be further enhanced through effective coaching and After Action Reviews (AARs) enabled by a virtual replay capability. To this end, the roles of the LVCTS simulation centres will include, but are not be limited, to the following:

a) To provide a virtual Training System with Synthetic Environment for individual and collective training;

b) To provide the ability to tailor individual training for students (trainees) in accordance with applicable course training plans;

c) To support force development experimentation; and

d) In the future, support collective training, above the Combat Team level, during distributed training events over multiple LVCTS facilities.

3.2. Concept of Operations for the Infrastructure

3.2.1. The Project will deliver five (5) facilities intended to be used for virtual training for various types of armoured vehicles at the following CFB: Gagetown; Valcartier; Petawawa; Shilo and Edmonton. The design of each facility should consider the need for future expansion, and enable the addition of additional floors.

3.2.2. The facility is currently arranged into the following functional groups:

3.2.2.1. The Simulation Group. This group is located in a designated area where the primary audience will execute training scenarios using the various Simulators and student workstations. This area is envisioned as a large open space (i.e. a commercial high bay building) and is designed to allow individuals or groups of soldiers to come and go with minimal disturbance to others involved in different training scenarios.

3.2.2.2. The Training and Operations Group. This group is located in a designated area, which consists of the rooms and spaces that directly support the simulation training functions in the Simulation Group. Primarily, this group contains the Exercise Control (EXCON) space, the Auditorium, the Instructors' and Role Players' areas. The training development offices and communications rooms are also part of this group.

3.2.2.3. The Support Group. This group contains all the administration and facility support areas and rooms (including the Contractor Operations and Maintenance Personnel offices and rooms), the Computer Server Rooms and personnel support areas, such as the lockers, lunch rooms and washrooms.

3.2.3. It is currently envisioned that:

3.2.3.1. The training classroom space will be used to house the core Training System used by the students (trainees) and the instructors which includes, but is not limited to, the Simulators, the reconfigurable and standard workstations, and the Instructor Observer/Controller Station (IOS).

3.2.3.2. The EXCON space will mainly be used during the conduct of collective training events for a Company or Combat Team, and will contain elements from the Training System that will enable the training event, the instruction and observation of students (trainees), as well as communication with all of the individuals involved in the event.

3.2.3.3. The Auditorium space will mainly be used to conduct one or multiple simultaneous AARs, and will provide the ability to access and display pertinent information from the training event(s) to the students (trainees), such as, but not limited to, review and saving of audio, video and performance statistics from training events.

3.2.3.4. The Computer Server Rooms space will be used to house the Data Center for the Training System, such as, but not limited to, the networking, telecommunications, and storage systems. Respondents are requested to identify the equipment required for the Data Center, the

size and space requirements, as well as any additional requirements for the proposed equipment in Annex B.

3.2.4. Respondents are requested to identify and provide cost data for infrastructure components required to support the proposed Training System, excluding the building and its core systems, for items such as, but not limited to, specialized workstations, audio/visual equipment, specialized office and building furnishings, conference room equipment, local area network, etc. in Annex C.

3.3. Concept of Operations for the Training System

3.3.1. The Training System will enable training in accordance with the Army's Systems Approach to Training; and will specifically support both individual and collective training for the LAV 6.0, LEO 2, and TAPV vehicles in the Synthetic Environment at each facility based on the training needs of the students (trainees).

3.3.2. It is envisioned that the Training System will enable the conduct of multiple simultaneous individual and collective training events.

3.3.3. The Training System will consist of the following core components: Simulators, Student Workstations, Synthetic Environment, Instructor Observer/Controller Stations (IOS), AAR Capability, EXCON Capability, and the Learning Management System (LMS).

3.3.3.1. The Simulators consist of high-fidelity replica of the actual equipment, and the interactions between the students (trainees) and the Synthetic Environment will be reflected in the Synthetic Environment, and the feedback will be sensed by the crew members inside the vehicle Simulator. For example, the result of firing the vehicles' weapon will be displayed in the Synthetic Environment and the resultant feedback on the crew members will be sensed within the Simulator.

3.3.3.2. The Simulators include the LAV 6.0 and LEO 2 vehicles' four (4) crew stations as identified in this document, as well as the following capabilities from DND's Land Command Support System (LCSS): Intercom, Command Net Radio, and Battle Management System. Furthermore, the vehicle Simulators will be integrated with the LCSS Simulators.

3.3.3.3. Student Workstations. The Student Workstations consist of the Reconfigurable and Standard Workstations, and the interaction between the students (trainees) and the Synthetic Environment will be reflected solely in the Synthetic Environment and displayed visually. The Reconfigurable Workstation will provide replicas of some of the devices and controllers of the actual equipment, and will be integrated with the LCSS Simulators; whereas the Standard Workstation will provide commercial off the shelf devices and controllers and will provide LCSS's communication capability.

3.3.3.4. Through the Synthetic Environment, the students (trainees) will be able to access variants of the LAV 6.0, LEO 2, and TAPV vehicles, as identified in this document, and interact with the objects and entities in the Synthetic Environment. For example, from within the

Synthetic Environment, it will be possible to dismount the vehicle, access specialized tools and instrumentation, and make measurements.

3.3.3.5. IOS. The IOS will provide the Instructors and Observer/Controller with the ability to control a pre-configured set of Simulators and Reconfigurable Workstations, and will provide access to the AAR capability as well as the EXCON capability.

3.3.3.6. The AAR capability will enable a professional discussion of training or operational event that focuses on identifying what happened, why it happened, how it can be improved and how good practices can be reinforced.

3.3.3.7. The EXCON capability will enable the control and coordination of training events, the creation of incidents; simulation of conditions and presentation of tactical and logistical problems to make the students (trainees) react according to the aims of the training event; and the transmission of orders and information.

3.3.3.8. The LMS is an integral part of the overall Training System and will provide a wide range of capabilities, as identified in this document, that enable the creation and management of training events, the AAR capability and the EXCON capability.

3.3.4. Individual Training

3.3.4.1. Individual training, in the context of the CA's Systems Approach to Training, and as it relates to armoured crew training, is defined and designed, to build the requisite soldier skills and drills in order for them to operate in each of the respective armoured vehicle's crew stations and to function as a vehicle crew.

3.3.4.2. It is envisioned that the land vehicle crew Simulators and reconfigurable workstations will be used to deliver individual training.

3.3.5. Collective Training

3.3.5.1. In the context of the CA's Systems Approach to Training, and as it relates to armoured crew training, Collective Training is defined and designed, to build proficient teams, and units of various sizes ready for employment.

3.3.5.2. Collective Training will enable students (trainees) to exercise the techniques, tactics and procedures that the various teams are called upon to execute.

3.3.5.3. Collective Training will enable the training of crew members up to a Combat Team.

3.3.5.4. It is envisioned that a subset or multiple subsets of and/or all of the trainers (Simulators, reconfigurable workstations, and standard workstations) will work jointly to enable collective training.

3.3.5.5. It is envisioned that a subset of and/or all of the workstations used by the Instructors and Observer/Controller and personnel conducting and managing the training event will work, in varying configurations, jointly with the Training System.

3.3.6. Training Audience

3.3.6.1. In accordance with the Army's Systems approach to Training, it is a common occurrence to have training events that mix various levels of training students (trainees) together. Training is typically focused at a particular training level which dictates the specifics in terms of team size and composition (for example, a LAV platoon or a MBT squadron); as well as the training scope in regards to objectives and outcomes. Based on the training level, exercise participants are split into two categories, Primary and Secondary.

3.3.6.2. The Primary Training Audience (PTA) for the system is the crew of the LAV 6.0, LEO 2, and TAPV vehicles.

3.3.6.3. The LAV 6.0 crew will be trained on the following crew stations: Gunner, Crew Commander, Driver, and an additional crew station based on the LAV 6.0 variant being simulated.

3.3.6.4. The LEO 2 crew will be trained on the following crew stations: Gunner, Loader, Crew Commander, and Driver.

3.3.6.5. The TAPV crew will be trained on the following crew stations: Remote Weapon Station (RWS), Crew Commander, Driver, and an additional crew station based on the TAPV variant being simulated.

3.3.6.6. The PTA will be trained with the Simulators and the reconfigurable workstations.

3.3.6.7. The Secondary Training Audience (STA) for the system are the individuals who will support the land vehicle crews during collective training events. The STA will be trained through their interactions with the entities and objects in the Synthetic Environment and will, at a minimum, require control over the following: Combat Service Support (CSS) elements, external Sub Units under Command, Unmanned Aerial Vehicle (UAV) control stations, dismounted personnel, and the Opposing Force (OPFOR).

3.3.7. Training Events

3.3.7.1. The Training System could be used for a combination of separate training events that could be executed simultaneously, such as: a single major exercise, multiple exercises, multiple individual training exercises, or a combination thereof. For example:

a) Single Major Exercise. In the case of a major Combat Team exercise, it is likely that the entire simulation centre will be dedicated to a single scenario. In such a case, the Simulators and workstations in the training classroom space would be employed by the PTA and STA, and the exercise would be controlled from the EXCON space, with the Exercise Director maintaining situational awareness from that location. All neutral or

OPFOR would be controlled from EXCON unless being conducted as a force on force exercise where both sides are manned by the PTA & STA.

b) Multiple Exercises. The Training System will be capable of supporting multiple lower level exercises conducted simultaneously and controlled either from EXCON space or from one of the IOS closer to the training audience. For example, all of reconfigurable workstations could be split into platoon size training audiences, all exercising at the same time, but in separate platoon scenarios. In addition, all the Simulators could be used as individual vehicle crew training sessions. Finally, all of the reconfigurable workstations could exercise together in a separate tactical scenario.

c) Multiple Individual Training Scenarios. The Training System will enable the conduct of several simultaneous training scenarios using the Simulators, reconfigurable workstations and standard workstations. Each of these scenarios will be run in separate instances of the Synthetic Environment. For example, multiple scenarios could be conducted on a given day, and controlled simultaneously from the EXCON space or from an IOS. These scenarios could consist of a dedicated Gunner Scenario that uses all of the Gunner Simulators, and a dedicated Driver Scenario that uses all of the Driver Simulators.

d) Mixed Use. The Training System will enable the conduct of individual and collective training scenarios simultaneously. Each of these scenarios will be run in separate instances of the Synthetic Environment. For example, multiple scenarios could be conducted on a given day, and controlled simultaneously from the EXCON space or from an IOS. These scenarios could consist of a dedicated Turret Scenario that uses all of the Turret Simulators, and a dedicated Driver Scenario that uses all Driver Simulators, and a Company Training Scenario that uses all of the reconfigurable workstations.

4. Conceptual Architecture

4.1. LVCTS will deliver a Training System to the CA that consists of Simulators, workstations, network technology, infrastructure and contractor support. Figure 1 provides a conceptual architecture for LVCTS as it relates to the students (trainees) Training System, networking and infrastructure. Given how LVCTS will be utilized (both primary and secondary uses), the specific aspects of each portion of this architecture will be described later on in this document.

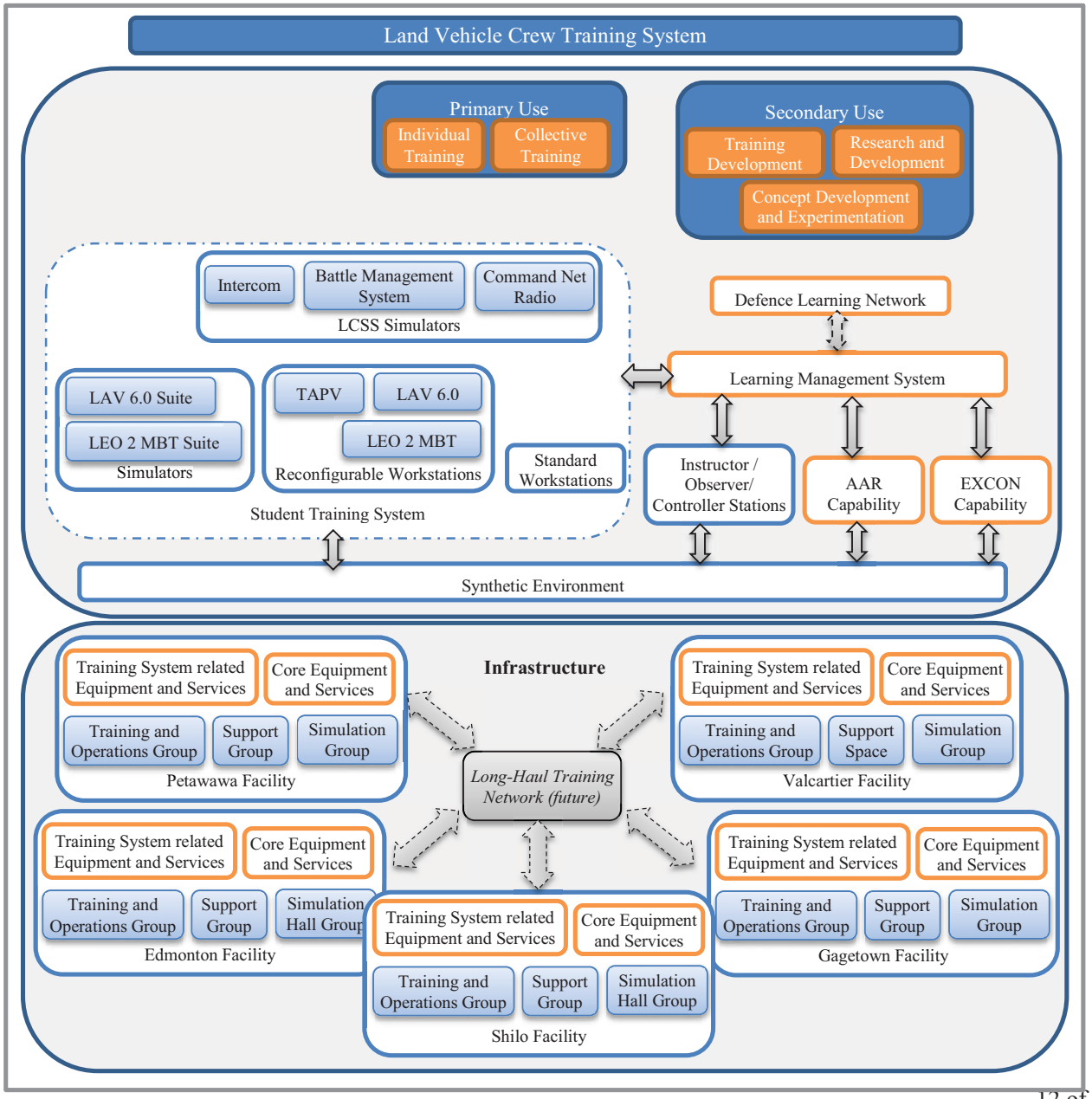

Figure 1: LVCTS Conceptual Architecture

5. Training System Requirements

5.1. General

5.1.1. The Training System consists of all of the components required to enable the crew of land vehicles to train in a common environment, and extends to include the equipment required to support the students (trainees) such as, but not limited to, workstations for the Instructors and Observers/Controllers and those involved in the direction and conduct of training events.

5.1.2. The Training System will include an identity management capability that enables a role based sign-on, of the various users, into the overall Training System, where the roles could be administrator, instructor, Observer/Controller, students (trainees), etc. For example, a student (trainee) could sign-on to a simulator or any of the student workstations, and the system should recognize the students (trainees) and load the associated profile, and provide recommendations based on the students (trainees) course plan.

5.2. Synthetic Environment

5.2.1. The Synthetic Environment will provide the Training System users, at a minimum, the ability to control the following entities: CSS elements, external Sub Units under Command, UAV control stations, dismounted personnel, and the OPFOR. The command and control functionality will be defined during the Definition phase of the project.

5.2.2. The Synthetic Environment will provide the Training System user with the ability to add in-house and other models.

5.2.3. The Synthetic Environment will provide the ability to modify training parameters during the conduct of and prior to a training event, such as, but not limited to, weather conditions, terrain and enemy reactions.

5.2.4. The Synthetic Environment will provide the ability to accelerate and decelerate (slow down) time.

5.2.5. Respondents are requested to provide information with regards to the ability to accelerate and decelerate time in Annex B.

5.2.6. The Synthetic Environment will simulate, at a minimum, terrain, environmental conditions, vehicles, and personnel.

5.2.6.1. Terrain

5.2.6.1.1. The terrain will accurately reflect flora, fauna, and man-made features and provide realistic motion experience for vehicle operations (i.e. events such as explosions or vehicular movement occurring during a simulation shall modify the terrain, affecting such things as line of sight and mobility). The terrain fidelity will be sufficiently high quality to enable low

level tactics at ground level to be exercised, including ground of a realistic "rough" nature and a high density of vegetation, man-made features, and other clutter.

5.2.6.1.2. The terrain shall be dynamic and display cause-and-effect relationships resulting from the within the Synthetic Environment. For example, during a simulation, vehicles will leave tracks on ground, artillery impacts will create craters, and cannon fire impacts will damage buildings and impact terrain.

5.2.6.1.3. The Synthetic Environment will include a terrain database that includes the entire planet at a baseline fidelity level with the ability to add specific locations, and will provide the ability to insert detailed geo-specific terrain data for specific areas.

5.2.6.1.4. Respondents are requested to provide information with regards to the baseline fidelity level, as well as information on the cost model associated for the addition of higher fidelity data, and to propose tools that would provide DND with this capability and to identify the associated cost in Annexes B and C.

5.2.6.2. Environmental Conditions

5.2.6.2.1. It is vital that environmental conditions are accurately simulated to ensure realistic effects on vehicle and crew performance.

5.2.6.2.2. Environmental conditions relevant to the terrain shall be depicted with their appropriate effects on sensors, movement, and vision. These conditions include, but are not limited to:

a) Day and night light conditions;

b) The sun and moon shall be depicted based on geo-location on earth, and time of day; and

c) Seasonal changes: winter, spring, summer and fall driving conditions.

5.2.6.3. Vehicles

5.2.6.3.1. The Synthetic Environment will include simulations of the LAV 6.0, LEO 2, and TAPV vehicles and there variants.

5.2.6.3.2. The Synthetic Environment will provide the ability to create and include a baseline set of realistic scenarios to enable soldiers to learn, improve and maintain their skills.

5.2.6.3.3. The Synthetic Environment will provide an initial set of other types of vehicles from different countries (i.e. UAV, aircraft, vehicles, weapons, etc), and will also provide the ability to augment this initial set.

5.2.6.3.4. Respondents are requested to provide information with regards to the baseline capability provided with the proposed Synthetic Environment, as well as information on the cost

model associated for the additional capability, and to propose tools that would provide DND with this capability and to identify the associated cost in Annexes B and C.

5.3. Computer Generated Forces (CGF)

5.3.1. The CGF simulation core will accurately represent three dimensional vehicles, aircraft, and personnel (enemy, friendly and neutral) in day, night, and sensor spectral bands in all weather conditions.

5.3.2. Three-dimensional Computer Generated Entities (CGEs) will be displayed, in sufficient detail to accurately portray enemy, friendly and neutral force characteristics, in the Synthetic Environment.

5.3.3. The CGF will have the ability to emulate the movement experienced during tactical driving and engagement with the primary and secondary armaments. The users of the Training System will have the ability to aggregate CGF entities to enable controlling groups at section, platoon and Company levels.

5.3.4. The Training System will include a collection of CGEs that would include, but not be limited to, the following:

a) Canadian Armed Forces (CAF), United States (US) and other North Atlantic Treaty Organization (NATO) troops including infantry, armour, artillery, engineers, medics and service support personnel;

b) Neutral forces based on civilian populations;

c) Enemy troops based on insurgents, guerilla and generic enemy;

d) Mines, Improvised Explosive Devices (IEDs) and booby traps capable of being inserted in scenarios;

e) Infrastructure based on the region being modelled;

f) Military unarmoured and armoured vehicles, both tracked and wheeled, based on CF, allies and enemy forces;

g) Military based support vehicles (e.g. mine ploughs, rollers, dozers, etc.);

h) Civilian vehicles based on the region being modelled;

i) Animals based on the region being modelled; and

j) Aircraft capabilities (e.g. UAVs, transport helicopters, attack helicopters, etc.).

5.3.5. The CGEs will be capable of being damaged, destroyed, wounded or killed as appropriate dependent on the action of friendly or enemy.

5.4. Image Generation

5.4.1. The imagery presented to the crew members in the various optic systems shall not be noticeably degraded (i.e. jump, tear, etc.).

5.4.2. The various sighting systems will have a resolution similar to that of the actual vehicle equipment.

5.4.3. Respondents are requested to provide information on the resolution of the various sighting systems being proposed in Annex B.

5.4.4. Imagery will be compatible with the use of correctional lenses.

5.4.5. The refresh rate of the displayed images will allow the simulated platform to fully manoeuvre within its operational envelope with no visual anomalies or perceived latency.

5.5. Simulators

5.5.1. The Simulators are envisioned to be a replica of the actual equipment, and will enable the students (trainees) to transition from the simulator to the real equipment without noticeable changes.

5.5.2. The Simulators will enable the students (trainees) to perform all their tasks to the required training standards and the results of the students' (trainees') actions would be represented in the Synthetic Environment.

5.5.3. Respondents are requested to identify size and type of space that needs to be provided to accommodate the simulator in Annex B. For example, area in square meters, clearance height, safety considerations, operational clearances, or any other space requirements.

5.5.4. Respondents are requested to identify design considerations and requirements that need to be accounted for as part of building design to accommodate the simulator (floor loading, electrical, heating, ventilation, air conditioning, etc.) in Annex C.

5.5.5. Respondents are requested to identify consumables or parts required to maintain the operations of the Training System, and to provide a description of the item, the approximate quantities and storage requirements in Annex B, and to identify the associated costs in Annex C.

5.5.6. Respondents are requested to identify specific sound considerations as it pertains to the Simulators and reconfigurable workstations in Annex B.

5.5.7. LCSS Simulators

5.5.7.1. The existing situational awareness, battle management and communication capabilities of the LCSS will be simulated and integrated into the trainers and the overall Training System.

5.5.7.2. The LCSS Simulators shall have the ability to be easily updated in order to maintain its fidelity to the operational version of the LCSS.

5.5.7.3. The LCSS - Battle Management System simulator will enable the vehicle crew to fight as a vehicle, platoon, and/or a Combat Team. It will provide the common operational picture (COP) and the local situation awareness of, the following:

a) Positional Awareness;

b) COP;

c) Map Interface;

d) Navigation Tools;

e) Chat;

f) Georeferenced collaboration;

g) Reports and Returns;

h) Quick Orders, Overlays;

i) Sensor Information Display;

j) Local Situational Awareness (own vehicle);

k) Alerts and Alarms;

l) Map Symbology; and

m) Interfaces with fire control, navigation, vetronics, sensor and soldier systems.

5.5.7.4. The Simulators for the communication capability consist of the simulator for the vehicle intercom and for the combat net radio (CNR), and will simulate the number of voice and data channels available on the operational vehicles.

5.5.7.5. The CNR simulator shall provide a radio propagation model that can be modified and turned-off by those conducting the training event (instructors and others).

5.5.7.6. The CNR simulator will enable the vehicle crew to communicate on both channels as a vehicle, platoon, and/or a Combat Team.

5.5.7.7. The intercom simulator will enable the vehicle crew to communicate amongst the various crew positions.

5.5.8. LAV 6.0 Simulator Suite

5.5.8.1. The LAV 6.0 simulator suite, will replicate the Infantry Variant, and consists of two Simulators: a Driver Module Simulator and a Turret Module Simulator. It will address the training needs of the Driver, and the Turret Crew (Gunner and Crew Commander Stations). The Simulators will replicate, as close as possible, the interior of the real vehicle and, the equipment

that the crew member will require for their duties (e.g. gunner sight, hand controllers, displays, seats, etc.).

5.5.8.2. The LAV 6.0 Driver Module Simulator will enable training the Driver and allow for the practice of out-of-hatch operations of the vehicle with a view representative of what the crew member would normally see in the operational vehicle. It will emulate the physical dimensions, ingress and egress requirements of the operational vehicle.

5.5.8.3. The LAV 6.0 Turret Module Simulator will enable training the Gunner and Crew Commander individually and jointly, and provide an out of hatch view for each crew member representative of what they would normally see in the operational vehicle.

5.5.8.4. The LAV 6.0 Driver and Turret Module Simulators will work individually and jointly enabling the Driver and Turret Crew to be trained individually and/or jointly as a vehicle crew, and be in close proximity to one another.

5.5.8.5. The LCSS Simulators will be integrated into the LAV 6.0 simulator suite.

5.5.9. LEO 2 MBT Simulator Suite

5.5.9.1. The LEO 2 MBT simulator suite consists of two Simulators: a Driver Module and Turret Module. It, will address the training needs of the Driver, and the Turret Crew (Gunner, Loader, and Crew Commander Stations). The Simulators will replicate, as close as possible, the interior of the real vehicle, and the equipment that the crew members will require for their duties (e.g. gunner sight, hand controllers, displays, seats, etc.)

5.5.9.1.1. Currently, the Turret Crew training requirement is met by the Leopard Gunnery Skills Trainers (LGST). The LGST can be classified as a near simulator (the Gunner and Crew Commander stations are higher fidelity than the Loader station).

5.5.9.1.2. The Project is considering three options with regards to the LEO 2 MBT Turret Module simulator: (1) integrating the LGST as is; (2) integrating an enhanced version of the LGST, with higher fidelity loader station; and (3) acquiring a new capability to meet the training needs of the Turret Crew. This decision will be dependent on the cost, technical challenges, and other issues and/or concerns raised by Industry.

5.5.9.1.3. Respondents are requested to provide their perspective on the three (3) options associated with the LEO 2 MBT Turret module simulator in Annex B, and to provide a separate price for each option in Annex C.

5.5.9.2. The LEO 2 MBT Driver Module Simulator will enable training the Driver and allow for the practice of out-of-hatch operations of the vehicle with a view representative of what the crew member would normally see in the operational vehicle. It will emulate the physical dimensions, ingress and egress requirements.

5.5.9.3. The LEO 2 MBT Turret Module Simulator will enable training the Gunner, Loader and Crew Commander individually and jointly, and provide an out of hatch view for each crew members representative of what they would normally see in the operational vehicle.

5.5.9.4. The LEO 2 MBT Driver and Turret Module Simulators will work individually and jointly enabling the Driver and Turret Crew to be trained individually and/or jointly as a vehicle crew, and be in close proximity to one another.

5.5.9.5. The LCSS Simulators will be integrated into the LEO 2 MBT Simulator Suite.

5.6. Workstations

5.6.1. The Training System will include two types of student workstations: reconfigurable and standard workstations.

5.6.2. It is envisioned that the reconfigurable workstations will be used for vehicle crew training by the PTA individually and/or collectively. Whereas, the standard workstations will be used, by the STA during collective training to assume the roles required to create a partial or full Combat Team.

5.6.3. Reconfigurable Workstations

5.6.3.1. Reconfigurable workstations will contain some devices and controllers that are replica of the actual equipment, but the majority will be simulated equipment in the Synthetic Environment, and will enable the students (trainees) to perform all their tasks to the required training standards in the Synthetic Environment.

5.6.3.2. Reconfigurable workstations will provide the full functionality of all system and components used by the respective crew member, and will offer an out-of-hatch view representative of what they would normally see in the operational vehicle.

5.6.3.3. It is envisioned that a physical grouping of four (4) reconfigurable workstations will be used to simulate all three vehicles, namely the LEO 2 MBT, LAV 6.0 and TAPV, where each workstation in this grouping will be dedicated to a specific crew member.

5.6.3.3.1. The first workstation will be dedicated to the Drivers of the three vehicles;

5.6.3.3.2. The second workstation will be dedicated to the Crew Commanders of the three vehicles;

5.6.3.3.3. The third workstation will be dedicated to the Gunners of the three vehicles; and

5.6.3.3.4. The fourth workstation will be a variable crew station that will be based on the vehicle variant being simulated:

a) For the LEO 2 MBT, it will be the loader crew station;

b) For the LAV 6.0, depending on the vehicle variant being simulated this position will vary and will impact the Operator`s interactions in the real world and perceptions in the Synthetic Environment. The fourth position will be configurable to the following:

i. Forward Observer Officer (FOO) in the LAV 6.0 Observation Post Variant;

ii. Rear Sentry / Air Sentry in the LAV 6.0 Infantry Variant;

iii. Surveillance System Operator in the LAV 6.0 Recce; and

iv. RWS operator in the LAV 6.0.

c) For the TAPV, depending on the vehicle variant being simulated this position will vary and will impact the Operator`s interactions in the real world and perceptions in the Synthetic Environment. The fourth position will be configurable to the Rear or Air Sentry in the Infantry, Reconnaissance, and General Utility Variants.

5.6.3.4. The Synthetic Environment will, at a minimum, contain the vehicle variants for the LEO 2, LAV 6.0 and TAPV.

5.6.3.5. The crew member, at the fourth workstation, will be able to communicate with elements outside the vehicle via radio, to use instruments and/or machinery, to interact with or to obtain readings on objects outside the vehicle and to use secondary and personal weapons to engage targets when outside of the hatch.

5.6.3.6. Each workstation in this grouping will function both individually and jointly enabling each crew member to be trained individually, and jointly as a vehicle crew.

5.6.3.7. The LCSS Simulators will be integrated into the reconfigurable workstations.

5.6.4. Standard Workstations

5.6.4.1. During collective training events, the standard workstations will be used to enable the STA to perform all their tasks, in the Synthetic Environment, using simulated equipment, that includes, at a minimum to, the following:

a) Engineering Vehicles such as but not limited to: Bridging tanks, Armoured Recovery Vehicles, Engineering Tank;

b) Vehicles such as but not limited to: Heavy Logistics Vehicles, Armoured Heavy logistics Vehicles;

c) Reconnaissance Vehicles such as but not limited to: Land Reconnaissance, Surveillance System, UAV;

d) Dismounted Position: Infantrymen;

e) OPFOR;

f) CSS Enablers; and

g) Specialist roles.

5.6.4.2. The capability of the LCSS Simulators will be provided at the standard workstations.

5.7. AAR Capability

5.7.1. An AAR is a professional discussion of training or operational event that focuses on identifying what happened, why it happened, how it can be improved and how good practices can be reinforced. Depending on the level of training, an AAR may be conducted in either an informal or formal manner with the actual AAR event usually lasting no more than one hour.

5.7.2. In order to conduct a successful AAR the following, at a minimum, will be required to have:

a) Scalable and dividable meeting rooms that enable the conduct of simultaneous AARs for different sizes of groups (ranging from several small groups up to an entire Combat Team, maximum of 150 individuals);

b) Display equipment that allows for the playback of recorded training events, in both directions forward and reverse, at several speeds, and from the vantage point of any entity or spatial point within the Synthetic Environment. Respondents are requested to provide information on the playback speed in Annex B;

c) Communication equipment that allows for a discussion that can be easily heard by up to the entire PTA and can also be scaled back so as to not disturb other training groups;

d) The ability to capture events from any simulator or workstation;

e) The ability to search, select and export the training event scenario in order to create presentations;

f) The ability to easily create presentation material;

g) The ability to interact with the playback in order to move simulation entities, mark, label and identify items;

h) The ability to record and playback all instrumentation mechanisms including of radio traffic, global positioning data, and/or video captures; and

i) The ability to record all relevant battle statistics including but not limited to the number of kills, shots fired/ hits/ hit percentage etc.

5.7.3. The primary user for the AAR capability will be the Instructors and Observers/Controllers, as well as those involved in controlling, conducting and providing debriefs for a given Training Event, such as, but not limited to, the Exercise Director and other support staff.

5.7.4. During the training event, the AAR capability will be used to record and make note of information that will be debriefed later. After the training event, it will be used to access the recorded training events for the purposes of debriefing.

5.7.5. It is envisioned that this capability will be available in various spaces in the facility, such as: debrief rooms and auditoriums, the training classroom space in close proximity to the Simulators and workstations, and the EXCON space that will be used to control larger scale training events.

5.8. EXCON Capability

5.8.1. EXCON cell is intended to be the focal point for directing all exercise activities related to the conduct of individual and collective training. EXCON can be subdivided into two groups that are responsible for the following:

a) Higher Control (HICON). A group of military members responsible for creating incidents, simulating conditions and presenting tactical and logistical problems to make the trainees react according to the aims of the exercises; and

b) Lower Control (LOCON). A group of military members who obey, wrongly obey or make believe they obey orders given to them by military students (trainees)s (trainees) at a higher level to make them react according to the aims of the exercises.

5.8.2. For individual and collective – crew level training events, this capability will be available to the Instructors and Observer/Controller in the training classroom space; whereas for larger collective training events, this capability will be available to the Exercise Director and those supporting the training event from a space dedicated to EXCON.

5.8.3. The EXCON space will be the control centre for the building and will be operated by both military and Contractor personnel, and will be used to launch training scenarios within the facility.

5.8.4. It is envisioned that in the future, the EXCON space across the various sites will be networked.

5.8.5. The EXCON space will contain the necessary number of workstations for the Exercise Director, Instructors, Observers/Controllers, and other players; and will be equipped with large display screens upon which the training scenario can be played in real time for senior commanders and Observer/Controllers.

5.8.6. It is envisioned that for the purpose of interconnectivity and future expansion of the Training System, this space will require a flooring system that provides ease of access to power, signal and data cabling.

5.8.7. Respondents are requested to propose the type and quantity of equipment required for the EXCON capability based on the specific user and to identify any specific configuration and access requirement for the equipment being proposed for this space in Annex B, and the associated costs in Annex C.

5.8.8. The Exercise Director coordinates all activities related to the training event and is responsible for creating incidents; simulating conditions and presenting tactical and logistical problems to make the students (trainees) react according to the aims of the training event; and will transmit orders and information to the trainee.

5.8.8.1. As an example, during a training event, a member of the EXCON could play the role of the commander nearby his students (trainees). EXCON will pick training events from the master events lists, and will provide verbal and written orders to the Combat Team leader, and will have access to the same communication systems as the students (trainees).

5.8.9. During the conduct of the training event, support staff will mainly be co-located in the EXCON space, while Observer/Controllers will have the ability to observe the students (trainees) from this space or to move around the training classroom space (the Simulators and workstations).

5.8.10. The LCSS simulator suite will be integrated into the EXCON capability and will enable communication with the students, and the Instructor and Observer/Controller at the IOS.

5.8.11. The EXCON capability will, at a minimum, provide the ability to do the following:

a) Affect the Synthetic Environment including environmental conditions, landmarks, infrastructure and forces (friendly, neutral and enemy forces, etc.);

b) Affect the PTA and STA ability through attacks and/or failures of combat systems such as command and control networks, vehicle systems, weapon systems, etc;

c) Allow communication between the individuals in the EXCON space and the training audience either by phone, CNR and other means;

d) Allow monitoring and recording of all events, tracking the progression of the scenario, injection of events from the main event list, etc;

e) Provide the ability to load and manipulate previously recorded training events independent of ongoing training events; and

f) Provide the ability to select specific exercises; and to pause, stop, start, and restart a given exercise.

5.9. Instructor Observer/Controller Station

5.9.1. The IOS workstations will be situated in close-proximity to the Simulators and both types of student workstations.

5.9.2. In addition, the Instructors and Observers/Controllers will require additional workstations, in the Auditorium (or AAR Room(s)) and the EXCON space that provide the AAR and EXCON capability.

5.9.3. Respondents are requested to propose the type and quantity of equipment required for the AAR capability in the Auditorium and the EXCON space, and to identify any specific configuration and access requirement for the equipment being proposed for this space in Annex B, and the associated costs in Annex C.

5.9.4. The IOS workstations will enable the creation and monitor and control of training scenarios, as well as the configuration of the Simulators and Reconfigurable Workstations associated with the scenario. For example, on a given day multiple simultaneous training scenarios could require configuring the IOS workstation as follows:

5.9.4.1. The first IOS workstation could be configured for a Driver Training Scenario and control all of the Driver Simulators;

5.9.4.2. The second IOS workstation could be configured for a Turret Training Scenario and control all of the Turret Simulators, as well as a Gunner Training Scenario and control all of the Gunner Simulators; and

5.9.4.3. The third IOS workstation could be configured for a Platoon Training Scenario and control all of the reconfigurable workstations.

5.9.5. During larger scale training events, the training classroom space could be used to conduct concurrent training events. In this example, an IOS could be used, as part of the larger scale training event, for local observation and mentoring, rather than directing; and other IOS could be used to command and control the concurrent training events.

5.9.6. It is expected that the Simulators will only be operated by the students (trainees), in the presence of “operator” assistance such as technical assistance from the Contractor`s support team. As such, consideration should be given to providing essential “system control” features at the IOS. Technical assistance for collective training could then be provided centrally from the Technical Control Centre or the Data Centre by the Contractor`s support team.

5.10. Learning Management System

5.10.1. The LMS will be used to monitor and assess the progress of the training audience from individual to the various types of collective training exercises, and will enable confirmation that the required training standards have been met.

5.10.2. It is envisioned that the LMS will be integrated with the Defence Learning Network. The level of integration will be defined in the Definition phase of the project.

5.10.3. The LMS is an integral part of the overall Training System and it will work both in conjunction and independently from the Training System. It is envisioned that the LMS capability will provide, at a minimum, the following:

a) The ability to manage students (trainees) which includes, but is not limited to, the ability to monitor, assess, track statistics and report on their individual and collective progress;

b) The ability to manage instructors;

c) The ability to manage training events, such as, but not limited to, training event scenario generation, the injection of events into a training event, monitoring the progress and trainee performance for on-going training events;

d) The ability to monitor and take control of a training event, which could include halting an on-going scenario, rewinding and resuming the scenario;

e) The ability to record multiple concurrent training events from varying viewpoints;

f) The ability to annotate, textually and verbally, live and recorded training events;

g) The ability to playback a recorded training event;

h) The ability to manage the training classroom resources;

i) The ability to manage courses, which includes, but is not limited to, providing the ability for students (trainees) to self-register, automated assignment of specific modules/scenario to specific groups based on progress;

j) The ability to author and deliver course content; and

k) The ability to generate automated reports which includes, but is not limited to, the learning objectives and the achievement status.

5.11. Other Tools

5.11.1. Terrain generation tools that are compatible with the Synthetic Environment will be provided and will enable the import of terrain data such as, but not limited to, geo data and higher fidelity terrain into the Synthetic Environment database.

5.11.2. 3D model generation tools that are compatible with the Synthetic Environment will be provided and will enable the various types of models into the Synthetic Environment database.

5.11.3. Map generation tools that are compatible with the Synthetic Environment will be provided and will enable the import and export of maps into and from the Synthetic Environment database.

5.11.4. Scenario Generation tools that are compatible with the overall Training System will be provided and will enable the creation of individual and collective training scenarios.

5.11.5. Respondents are requested to specifically identify the tools proposed as part of the solution to enable DND/CAF personnel with the ability to increase the fidelity of objects and entities in the Synthetic Environment in Annex B.

6. Interoperability

6.1. To facilitate expansion for collective training the Training System will use either High Level Architecture (HLA) (Institute of Electrical and Electronics Engineers (IEEE) Standard 1516) or Distributed Interactive Simulation (DIS) Standards (IEEE Standard 1278). LVCTS is considering adopting these standards to be interoperable with other simulations employed by the CA.

6.2. Respondents are requested to specifically provide information as to the capabilities of the two standards identified above to meet the functional requirements outlined in this document and to provide recommendations on the standard to be adopted in Annex B.

7. Networking

7.1. Defence Wide Area Network (DWAN)

7.1.1. For the purpose of this P&A, assume that the DWAN infrastructure will be present at each LVCTS facility; as well as equipment that is connected to the network, including, but not limited to, workstation, voice-over-IP telephony, etc.

7.1.2. Respondents are requested to propose equipment that forms part of the system and would be connected to the DWAN, along with the associated quantities in Annex B and to identify the quantities and associated cost in Annex C.

7.1.3. Respondents are requested to propose networking requirements in support of the Training System and its integration across the various spaces in the facility in Annex B and to identify the quantities and associated cost in Annex C.

7.2. Local Area Network

7.2.1. It is envisioned that the Training System, at each facility, will work on a reconfigurable standalone Local Area Network referred to as the training network.

7.2.2. The training network will enable the Simulators and the two types of student workstations to operate individually, and in groups, allowing multiple individual crew members, crews and groups of crews to train at the same time.

7.2.3. The training network will enable the conduct of multiple simultaneous training events in one or more instances of the Synthetic Environment.

8. Integrated Logistic Support (ILS)

8.1. The Contractor will provide all ILS for the LVCTS including technical data, installation, supply support, test/calibration equipment, repair, updating, and training support personnel.

8.2. Respondents are requested to propose the content of the Technical Data Package (TDP) in Annex B and its associated cost, such as, but not limited to, Students (Trainees) and Instructor manuals, Configuration and Operation manuals, etc. in Annex C.

9. Sustainment

9.1. Concept of Support

9.1.1. The Contractor will be responsible for supporting the infrastructure and the Training System through their life-cycle, estimated at twenty five (25) years, with periodic upgrades.

9.1.2. As the Training System will form an integral part of the facility, it is envisioned that the Contractor will be responsible for both the management of the facilities and the Training System.

9.1.3. Respondents are requested to provide a cost estimate for Contractor personnel to manage both the facilities and the Training Systems based on the service categories identified in this section in Annex C.

9.1.4. The Contractor will be required to obtain the appropriate level of security clearance for all Contractor personnel, and will ensure the same for any sub-Contractor.

9.1.5. The Contractor will provide support on a site-by-site basis, and may provide centralized support for common services, that will be identified in the definition phase of the project, such as help desk services.

9.1.6. The facility will operate during regular business hours and the Contractor will need to provide a surge capability, when required.

9.1.7. The Contractor will conduct maintenance and upgrade activities in a manner to minimize the impact on the conduct of training events.

9.1.8. The Project is considering a performance based contracting approach, with rolling waves, and would cover the following types of services:

9.1.8.1. Engineering Support Services that will include, but are not limited to the following:

a) Integrate new or updated synthetic models or terrain databases supplied as Government Furnished Information (GFI); and

b) Provide support to DND/CAF personnel in the management and development of elements associated with the Synthetic Environment, the LMS, and other components of the Training System.

9.1.8.2. Maintenance Support Services that will include, but are not limited to, the following:

a) Maintenance of the Training Systems and the associated components, on-site networks, servers; etc.

b) Configuration and obsolescence management of the LVCTS hardware and software, including the maintenance of logs for repairs; etc;

c) Provide spare parts, and conduct stocking and delivery activities;

d) Provide obsolescence management for systems and provide advice on repair/replace decisions;

e) Correct minor faults (i.e. monitors, keyboards, minor line repairable units, etc.) with minimal impact to the conduct of training events; and

f) Correct major faults (i.e. major components, etc.) with minimal impact to the conduct of training events.

9.1.8.3. Training Support Services that will include, but are not limited to, the following:

a) Technical support to existing tools and system used for training (e.g. operating the Simulators and training management system; maintenance of software; internal site networks and hardware; provision of spares; software license management; database management of servers; backup and disaster recovery; and maintaining & managing maintenance repair logs, etc.);

b) Involvement in exercise planning activities (e.g. Annual Planning Conferences, Initial Planning Conferences, Main Planning Conferences, Final planning Conferences, Tactical Planning, etc.);

c) Provide support to DND/CAF personnel in the development and creation of training scenarios;

d) Provide training to new instructors and refresher training;

e) Provide training after significant changes resulting from system updates or upgrades;

f) Prepare and provide initial students (trainees) packages;

g) Provide support in the configuration of the Training System;

h) Provide support to training events by filling the role of missing participants, for example control and/or initiate opposing forces and computer generated forces; and

i) Prepare scenario/exercise debrief packages.

9.1.8.4. Operating Support Services that will include, but are not limited to, the following:

a) Provide facilities management services;

b) Configuration of the Training System, and support to DND/CAF personnel in the preparation for and conduct of training events;

c) Contractor personnel will be required to support a minimum of four (4) simulator suites during a training event;

d) Configuration, power up and down, and operation of the Training System and networks including the equipment in the EXCON space and Auditorium (AAR room(s)); and

e) Operation of the Training System, networks, Simulators and workstations.

9.1.8.5. Information Management and Information Technology Services that will include, but are not limited to, the following:

a) Hardware, software, and network management services;

b) Data Back up and disaster recovery;

c) Software license management;

d) Database management; and

e) Helpdesk services, such as incident and problem management, and password control and reset.

10.Bilingualism

10.1. The Training System will be available for the students (trainees) and instructors in both official languages (English and French), except where it contradicts the physical appearance of the vehicle.

10.2. It will be required that all information pertaining to the LVCTS to be available in both official languages (English and French) and to be provided, upon request, to the Technical Authority.

11.Licensing

11.1. Respondents are requested to identify all of the software applications and tools included in the proposed solution, that requiring licensing, and to propose maintenance and support options based on per seat and enterprise wide licenses in Annex B, as well as the identify the associated costs in Annex C.

12.Government Furnished Information

12.1. Respondents are requested to identify the GFI, access to technical data and/or Intellectual Property (IP) that would be required to enable design and delivery of the described Training System, in particular the Simulators and reconfigurable workstations, and to comment on the mechanism for the provision of this information, along with any issues or concerns in Annex B.

12.2. Respondents are requested to provide feedback, in Annex B, on their ability to design and deliver the described Training System, and to describe their approach to address potential challenges associated with technical data and IP rights, and to provide the cost associated with addressing possible challenges in Annex C.

13.Government Furnished Equipment (GFE)

13.1. The Project is considering providing the LGST as GFE.

13.2. The Project may provide models and maps as GFE, for integration into the Synthetic Environment.

14. Project Schedule/Milestones

14.1. The LVCTS project schedule is provided to seek Industry feedback on the proposed timeline. The current schedule is as follows:

LVCTS Project Schedule	
Activity	**Planned Date**
Responses to the P&A	February 2017
Project Definition	February 2018
Draft RFP	January 2020
Project Implementation	October 2022
RFP	January 2023
Contract Award	September 2023
First Site Acceptance (Building and Training System)	September 2025
Final Site Acceptance	September 2027
Project Closeout	March 2028

14.2. Respondents are requested to provide feedback on the proposed project timelines in Annex B.

15. Distribution and Quantities

15.1. Table 1 identifies the core components of the Training System, located in the Training Classroom space, and the minimum required quantities by facility.

		FACILITIES				
CORE TRAINING SYSTEM		Gagetown	Valcartier	Petawawa	Shilo	Edmonton
LAV 6.0 Simulator Suite	Turret Module	Qty. 4	Qty. 4	Qty. 4	Qty. 4	Qty. 4
	Driver Module	Qty. 4	Qty. 4	Qty. 4	Qty. 4	Qty. 4
LE0 2 Simulator Suite	Turret Module (LGST provided as GFE)	Qty. 4	Not required	Not required	Not required	Qty. 4
	Driver Module	Qty. 4	Not required	Not required	Not required	Qty. 4
Students (trainees) - Reconfigurable Workstations	Grouping of 4 workstations	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)
Students (trainees) – Standard Workstations		Qty. 60	Qty. 60	Qty. 60	Qty. 60	Qty. 60
IOS		Qty. 14	Qty. 10	Qty. 10	Qty. 10	Qty. 14
LCSS Simulator Suite	Battle Management System	Qty. 46	Qty. 38	Qty. 38	Qty. 38	Qty. 46
	Intercom	Qty. 198	Qty. 178	Qty. 178	Qty. 178	Qty. 198
	CNR	Qty. 156	Qty. 136	Qty. 136	Qty. 136	Qty. 156

Table 1: Minimum Quantities for Core Components of the Training System

15.2. Table 2 identifies the core components of the Training System, located in the Training Classroom space, and the maximum required quantities by facility.

		FACILITIES				
CORE TRAINING SYSTEM		Gagetown	Valcartier	Petawawa	Shilo	Edmonton
LAV 6.0 Simulator Suite	Turret Module	Qty. 6	Qty. 4	Qty. 4	Qty. 4	Qty. 4
	Driver Module	Qty. 6	Qty. 4	Qty. 4	Qty. 4	Qty. 4
LE0 2 Simulator Suite	Turret Module (LGST provided as GFE)	Qty. 8	Not required	Not required	Not required	Qty. 8
	Driver Module	Qty. 8	Not required	Not required	Not required	Qty. 8
Students (trainees) - Reconfigurable Workstations	Grouping of 4 workstations	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)	24 groupings (Qty. 96)
Students (trainees) – Standard Workstations		Qty. 60	Qty. 60	Qty. 60	Qty. 60	Qty. 60
IOS		Qty. 14	Qty. 10	Qty. 10	Qty. 10	Qty. 14
LCSS Simulator Suite	Battle Management System	Qty. 52	Qty. 38	Qty. 38	Qty. 38	Qty. 50
	Intercom	Qty. 220	Qty. 178	Qty. 178	Qty. 178	Qty. 214
	CNR	Qty. 172	Qty. 136	Qty. 136	Qty. 136	Qty. 168

Table 2: Maximum Quantities for Core Components of the Training System

15.3. Respondents are requested to provide a separate cost for the minimum and maximum quantities in Annex C.

16. Industrial and Technological Benefits (ITBs)

16.1. The Government of Canada is consulting with Industry to support the development of the Value Proposition (VP) evaluation framework for the proposed LVCTS procurement. An informational presentation on the proposed VP framework is included in this P&A package. The presentation highlights Innovation, Science and Economic Development (ISED) Canada's internal market analysis of the Simulation and Training market sector, as well as seeks input from Industry on the structuring of the VP framework to best leverage this procurement to support long-term industrial benefits in Canada.

16.2. The feedback from Industry provided during the request for information process will be used to inform the strategic objectives of the VP framework. Following this engagement, the draft VP framework will then be released for further input from Industry as the project progresses.

16.3. Please refer to Annex E – Proposed Value Proposition Approach for the LVCTS project.

17. Process for RFP

17.1. The LVCTS Project may engage in the following activities:

a. Review P&A responses;

b. Conduct Industry Day(s) and/or site visits;

c. Conduct one-on-one meetings;

d. Post a Letter of Interest on the Buy and Sell website to initiate further Industry discussions;

e. Post a Draft RFP on the Buy and Sell website; and

f. Post a RFP on the Buy and Sell website.

17.2. Responding or not responding to this P&A request shall not put any vendor in an advantageous or disadvantageous position regarding their participation in the solicitation process. All vendors will have an equal and fair opportunity to participate in the solicitation process.

18. Requested Responses to P&A

18.1. Respondents are requested to provide the information requested in Annex B – Request for Information by March 6th 2017.

18.2. Respondents are requested to provide P&A information in Annex C – Cost Estimate Data by April 19th 2017, and to include a statement on the validity of the responses. Preferably, the data should be valid for a one year period post the closing date for the P&A on Buy and Sell.

18.3. Respondents are requested to review Annex E, and to provide answers to the ITB and VP questions.

All inquiries to this P&A shall be directed to:

William Rivett
Land and Air Equipment Procurement and Support Sector
11 Laurier Street, Place du Portage, Phase III, 8C2, Gatineau QC
K1A 0S5
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ANNEX A - LAND VEHICLE CREW TRAINING SYSTEM HIGH LEVEL MANDATORY REQUIREMENTS

1. General

1.1. The LVCTS will consist of new Simulators, connected by a network, in purpose built simulation facilities, to enable crews of the principle armoured combat vehicles to train as realistically as possible without using actual vehicles, at their home garrison locations.

2. Simulators

2.1. Crew stations for the Driver, Loader, Gunner and Crew commander of the LAV 6.0 and its variants, the LEO 2 MBT and the TAPV will be replicated by Simulators.

2.1.1. The Simulators will include a Synthetic Environment which provides realistic simulation of different terrain, weather conditions, enemy capabilities and enemy tactics. Instructors will be able to customise each training scenario, monitor the progress of each trainee and provide objective after action reviews of their performance using the results recorded during simulations.

2.1.2. The Simulators will enable soldiers to practice their own individual tasks within a vehicle, to work together with other soldiers as a complete vehicle crew, and to train collectively with other vehicle crews as a tactical unit.

2.1.3. The system must replicate the actual vehicles and scenarios sufficiently to enable soldiers to learn, improve and maintain their skills, using one or a combination of low, medium and high fidelity Simulators.

3. Training Network Technology

3.1. The LVCTS will provide a network to connect Simulators in each of the new garrison simulation facilities that enables an interactive training environment. The training network in each facility must enable the Simulators to operate independently, and in groups, to allow multiple individual crew members, crews, and groups of crews to train at the same time.

4. Infrastructure

4.1. The LVCTS will provide purpose-built simulation facilities at each of the five CFB including: Gagetown; Valcartier; Petawawa; Shilo and Edmonton.

4.2. Each simulation facility will have space for Simulators, training classroom, EXCON, Auditorium, Computer Server Rooms and some expansion space for potential future simulation systems.

5. Contractor Conducted Logistics Support

5.1. The LVCTS will provide Contractor conducted logistics support in each simulation facility without recourse to military manpower.

5.2. Technical support to all simulation activities will be provided to students (trainees), instructors and exercise directors.

5.3. Simulator operations and maintenance, systems management, and logistical support will be provided at each facility.

ANNEX B - LAND VEHICLE CREW TRAINING SYSTEM REQUEST FOR INFORMATION TABLE

Item	Reference	Request for Information
1	Para. 3.2.3.4	The Computer Server Rooms will be used to house the support systems for the Training System, such as, but not limited to, the networking, telecommunications, and storage systems. Respondents are requested to identify the types of support systems required, the size and space requirements, as well as any additional requirements for the proposed equipment.
2	Para. 3.2.4	Identify and provide cost data for infrastructure components required to support the proposed Training System, excluding the building and its core systems, for items such as, but not limited to, specialised workstations, audio/visual equipment, specialized office and building furnishings, conference room equipment, local area network, etc.
3	Para. 5.2.5	Provide information with regards to the ability to accelerate and decelerate time.
4	Para. 5.2.6.1.4	Provide information with regards to the baseline fidelity level, as well as information on the cost model associated for the addition of higher fidelity data, and to propose tools that would provide DND with this capability.
5	Para. 5.2.6.3.4	Provide information with regards to the baseline capability provided with the proposed Synthetic Environment, as well as information on the cost model associated for the additional capability, and to propose tools that would provide DND with this capability.
6	Para. 5.4.3	Provide information on the resolution of the various sighting systems being proposed.
7	Para. 5.5.3	Identify size and type of space that is required to accommodate the Simulator. For example area in square meter, clearance height, safety considerations, operational clearances, any other space requirements.
8	Para. 5.5.4	Identify design considerations and requirements that need to be accounted for as part of building design to accommodate the Simulator (floor loading, electrical, heating, ventilation, air conditioning, etc.)
9	Para. 5.5.5	Identify the storage requirement for consumables or parts required to maintain the operations of the training system, and to provide a description of the item, the approximate quantities and storage requirements.
10	Para. 5.5.6	Identify specific sound considerations as it pertains to the Simulators and reconfigurable workstations.
11	Para. 5.5.9.1.3	Provide their perspective on the three (3) options associated with the LEO 2 MBT Turret Module Simulator.
12	Para. 5.7.2.b	Provide information on the playback speed.
13	Para. 5.8.7	Propose the type and quantity of equipment required for the exercise control capability based on the specific user and identify any specific configuration and access requirement for the equipment being proposed for this space.
14	Para. 5.9.3	Propose the type and quantity of equipment required for the AAR capability in the Auditorium and the EXCON space, and identify any specific configuration and access requirement for the equipment being proposed for this space.
15	Para. 5.11.5	Identify other tools that will be provided to enable DND/CAF personnel with the ability to increase the fidelity of objects and entities in the Synthetic Environment, and provide a cost for these tools and the associated sustainment costs.
16	Para. 6.2	Provide information as to the ability of DIS and HLA to meet the functional requirements outlined for the LVCTS and provide recommendations on the standard to be adopted.
17	Para. 7.1.2	Propose equipment that forms part of the system and would be connected to the DWAN, along with the associated quantities.
18	Para. 7.1. 3	Propose the networking requirements in support of the Training System and its integration across the various spaces in the facility and identify the quantities and associated price.

19	Para. 8.2	Propose the content of the TDP and its associated cost, such as, but not limited to, Student and Instructor manuals, Configuration and Operation manuals, etc.
20	Para. 9.1.3	Provide a cost estimate for Contractor personnel to manage both the facilities and the Training Systems based on the service categories identified in this section.
21	Para. 11.1	Identify all of the software applications and tools included in the proposed solution, that requiring licensing, and to propose maintenance and support options based on per seat and enterprise wide licenses.
22	Para. 12.1	Identify the GFI, access to TDP and IP that would be required to enable design and delivery of the described Training System, in particular the Simulators and reconfigurable workstations, and to comment on the mechanism for the provision of this information, along with any issues or concerns.
23	Para. 12.2	Provide feedback on their ability to design and deliver the described Training System, and to describe their approach to address potential challenges associated with technical data and IP rights.
24	Para. 14.2	Provide feedback on the proposed project timelines.

ANNEX C - LAND VEHICLE CREW TRAINING SYSTEM COST ESTIMATE DATA

The cost data requested below is the specific information required by the project to support cost estimates through the various stages of project approval. The aim of the provided data sheets is to capture the full costs of LVCTS exclusive of the design, build and provision of core infrastructure services at the five (5) locations.

The cost data is divided into generic categories based on the different phases of project implementation, and a cost data sheet is provided for each site that reflects the quantity and composition of the Training System.

Based on past experience on similar projects, Respondents are encouraged to identify the components that form part of the proposed solution, and to provide more detailed cost breakdown, if they so choose.

Item	Description	Quantity	Cost	Comment
1	**NON-RECURRING ENGINEERING (NRE)**			Non-recurring engineering efforts should include all activities (i.e. data collection, design, development, testing, project management, documentation, etc.) up to the finalized pre-production unit(s)
1.A	***Simulators NRE***			
1.A.1	LCSS Simulator Suite			
1.A.1.1	Battle Management System Simulator	Lot		
1.A.1.2	Intercom Simulator	Lot		
1.A.1.3	Command Net Radio Simulator	Lot		
1.A.2	LAV 6.0 Simulator Suite			
1.A.2.1	Driver Module Simulator	Lot		
1.A.2.2	Turret Module Simulator	Lot		
1.A.3	LEO 2 Simulator Suite			
1.A.3.1	Driver Module Simulator	Lot		
1.A.3.2	Turret Module Simulator – Loader functionality	Lot		Include the NRE cost associated for enhancing the existing LGST Simulator to include higher fidelity Loader functionality.
1.A.3.3	Turret Module Simulator - replacement of LGST	Lot		Include the NRE cost associated with a new Turret Module Simulator for the 3 crew positions.

1.B	***Reconfigurable Workstations NRE***			
1.B.1	Driver Position			
1.B.1.1	LAV 6.0	Lot		
1.B.1.2	LEO 2	Lot		
1.B.1.3	TAPV	Lot		
1.B.2	Crew Commander Position			
1.B.2.1	LAV 6.0	Lot		
1.B.2.2	LEO 2	Lot		
1.B.2.3	TAPV	Lot		
1.B.3	Gunner Position			
1.B.3.1	LAV 6.0	Lot		
1.B.3.2	LEO 2	Lot		
1.B.3.3	TAPV	Lot		
1.B.4	Variant Position			
1.B.4.1	LAV 6.0	Lot		
1.B.4.2	LEO 2	Lot		
1.B.4.3	TAPV	Lot		
1.C	***Standard Workstation***			Itemize the components being proposed and include the associated NRE costs.
1.C.1	Proposed solution	Lot		
1.D	***Instructor Observer/Controller Station***			Itemize the components being proposed and include the associated NRE costs.
1.D.1	Proposed solution	Lot		
1.E	***Learning Management System***			Itemize the components being proposed and include the associated NRE costs.
1.E.1	Proposed solution	Lot		
1.F	***Synthetic Environment***			Itemize the components being proposed and include the associated NRE costs.

1.F.1	Proposed solution	Lot		
1.G	***AAR capability***			Itemize the components being proposed and include the associated NRE costs.
1.G.1	Proposed solution	Lot		
1.H	***EXCON Capability***			Itemize the components being proposed and include the associated NRE costs.
1.H.1	Proposed solution	Lot		
1.I	***Other – Simulation Hall Group***			Itemize the components being proposed for the capability in the space dedicated to the Simulation Hall Group and include the associated NRE costs.
1.I.1	Proposed solution	Lot		
1.J	***Other – Training and Operations Group***			Itemize the components being proposed for the capability in the space dedicated to the Training and Operations Group and include the associated NRE costs.
1.J.1	Proposed solution	Lot		
1.K	***Other – Support Group***			Itemize the components being proposed for the capability in the space dedicated to the Support Group and include the associated NRE costs.
1.K.1	Proposed solution	Lot		
1.L	***Other Training System***			Itemize any additional components being proposed for the Training System and the associated NRE costs.
1.L.1	Proposed solution	Lot		
1.M	***Tools***			Include the NRE costs for the tools being proposed, and itemize and cost any additional tools.
1.M.1	Terrain Generator Tool	Lot		
1.M.2	3D Model Generator Tool	Lot		
1.M.3	Map Generator Tool	Lot		
1.M.4	Scenario Generator Tool	Lot		
1.M.5	Training System Configuration Management Tool	Lot		Include the NRE costs for the tool that would enable managing the configuration of the Training System from the IOS or EXCON capability
1.M.6	AAR Generator Tool	Lot		Include the NRE costs for the tools that would enable generating (extracting, creating, etc) the AAR package for the instructor and students (trainees).

1.M.7	Other	Lot		
1.N	***Databases***			Include the NRE costs for the databases being provided, and itemize and cost any additional database related costs
1.N.1	Initial Terrain Database	Lot		
1.N.2	Initial Model Database	Lot		
1.N.3	Initial Map Database	Lot		
1.N.4	Initial Scenario Database	Lot		
1.N.5	Other	Lot		
1.O	***System Integration***			Include non-recurring costs for integrating the Training System (the Simulators, the two types of student workstations, the IOS, the EXCON and AAR capabilities). Cost associated for the system integration for the minimum and maximum quantities should be separated.
1.O.1	Training System – minimum quantity	Lot		
1.O.2	Training System - maximum quantity	Lot		
1.P	***Site Integration***			Include non-recurring cost for integrating components other than the Training System at each facility. Cost associated for the system integration for the minimum and maximum quantities should be separated.
1.P.1	Site Integration for *minimum* quantity at all 5 sites			Assume the sites are built and delivered in sequence from site number 1 to 5.
1.P.1.1	Site 1: CFB Gagetown	Lot		
1.P.1.2	Site 2: CFB Valcartier	Lot		
1.P.1.3	Site 3: CFB Petawawa	Lot		
1.P.1.4	Site 4: CFB Edmonton	Lot		
1.P.1.5	Site 5: CFB Shilo	Lot		
1.P.2	Site Integration for *maximum* quantity at all 5 sites			Assume the sites are built and delivered in sequence from site number 1 to 5.
1.P.2.1	Site 1: CFB Gagetown	Lot		
1.P.2.2	Site 2: CFB Valcartier	Lot		
1.P.2.3	Site 3: CFB Petawawa	Lot		
1.P.2.4	Site 4: CFB Edmonton	Lot		

1.P.2.5	Site 5: CFB Shilo	Lot		
1.Q	***Other***			Other NRE activities should be itemized and costed individually, such as but not limited, to the cost associated with the bilingual-ization of the Training System (in English and French)
1.Q.1	Bilingual-ization of Training System	Lot		Include the NRE for providing a Bilingual Training System, which would include the software applications being available in both official languages.
1.Q.2	Technical Data Package / Intellectual Property Rights	Lot		Include the cost to acquire the rights to use the TDP and/or IP for the simulators, and other components.
1.Q.3	Incremental cost associated with TDP and IP rights being provided as GFI	Lot		Include the cost associated with addressing possible challenges associated with designing and delivering the described Training System with TDP and IP rights being provided as GFI.
1.Q.4	Incremental cost associated with the absence of TDP and IP rights as GFI	Lot		Include the cost associated with addressing the issue of designing and delivering the described Training System in the absence of TDP and IP rights being provided as GFI.
1.Q.5	Incremental cost associated with TDP and IP rights for to be proposed alternate solutions	Lot		Propose alternate solutions for the design and delivery of the described solution and provide the associated costs.
1.Q.6	Other	Lot		Itemize the components being proposed and include the associated NRE costs.

Item	Description	Quantity	Cost	Comment
2	**CFB GAGETOWN SITE COST ESTIMATE**			Include the cost estimates for CFB Gagetown site, exclusive of the NRE.
2.A	**PRODUCTION**			Include the production costs, including testing until the item is ready for shipping to the site.
2.A.1	***Simulators***			Include the production costs, including testing until the item is ready for shipping to the site.
2.A.1.1	**LCSS Simulator Suite - Battle Management System**			Include the cost for the Battle Management System simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: One Simulator per vehicle

2.A.1.1.1	Battle Management System - Minimum quantity	46		
2.A.1.1.2	Battle Management System - Maximum quantity	52		
2.A.1.1.3	Battle Management System - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the Battle Management system, the AAR and EXCON Capabilities, as well as the IOS.
2.A.1.2	**LCSS Simulator Suite -Intercom**			Include the cost for the Intercom Simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per vehicle
2.A.1.2.1	Intercom - Minimum quantity	198		
2.A.1.2.2	Intercom - Maximum quantity	220		
2.A.1.2.3	Intercom - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON capabilities, and the IOS.
2.A.1.3	**LCSS Simulator Suite -Command Net Radio**			Include the cost for the command net radio simulators that are part of the core Training System (Simulators and the two types of student workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per person actively involved in a training event
2.A.1.3.1	Command Net Radio - Minimum quantity	156		
2.A.1.3.2	Command Net Radio - Maximum quantity	172		
2.A.1.3.3	Command Net Radio - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON capabilities, as well as the IOS.
2.A.1.4	**LAV 6.0 – Driver Module Simulator**			
2.A.1.4.1	Minimum quantity	4		

2.A.1.4.2	Maximum quantity	6		
2.A.1.5	**LAV 6.0 – Turret Module**			
2.A.1.5.1	Minimum quantity	4		
2.A.1.5.2	Maximum quantity	6		
2.A.1.6	**LEO 2 – Driver Module**			
2.A.1.6.1	Minimum quantity	4		
2.A.1.6.2	Maximum quantity	8		
2.A.1.7	**LEO 2 – Turret Module**			
2.A.1.7.1	Minimum quantity	4		
2.A.1.7.2	Maximum quantity	8		
2.A.1.8	**LEO 2 - LGST Integration**			
2.A.1.8.1	Minimum quantity	4		
2.A.1.8.2	Maximum quantity	8		
2.A.1.9	**LEO 2 – LGST, with new Loader functionality, Integration**			
2.A.1.9.1	Minimum quantity	4		
2.A.1.9.2	Maximum quantity	8		
2.A.1.10	**Reconfigurable Workstations (LAV 6.0, LEO 0, TAPV)**			
2.A.1.10.1	Driver Station	24		
2.A.1.10.2	Crew Commander Station	24		
2.A.1.10.3	Gunner Station	24		
2.A.1.10.4	Variant Station	24		
2.A.1.11	**Standard Workstations**			
2.A.1.11.1	In Training Classroom	60		The quantity only reflects the number of stations in the Training Classroom.
2.A.1.11.2	In other areas	To be proposed		Identify the number of additional workstations that are being proposed for the EXCON and AAR capability, etc. and the associated cost.
2.A.2	**IOS**			

2.A.2.1	In Training Classroom	14		The quantity only reflects the number of stations in the Training Classroom.
2.A.2.2	In other areas	To be proposed		Identify the number of additional stations that are being proposed for the EXCON and AAR capability, and associated cost.
2.A.3	**Learning Management System**			Identify the components being proposed for the capability and cost each component individually.
2.A.3.1		To be proposed		
2.A.4	**Synthetic Environment**			Identify the components being proposed for the capability and cost each component individually.
2.A.4.1		To be proposed		
2.A.5	**Other – Simulation Hall Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
2.A.5.1		To be proposed		
2.A.6	**Other – Training and Operations Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
2.A.6.1		To be proposed		
2.A.7	**Other – Support Group**			The components being proposed for the capability in the Facility space dedicated to the Support Group should be itemized and costed individually.
2.A.7.1		To be proposed		
2.A.8	**Other**			
2.A.8.1	Tools	To be proposed		
2.A.8.1.1	Terrain Generator Tool	To be proposed		
2.A.8.1.2	3D Model Generator Tool	To be proposed		

2.A.8.1.3	Map Generator Tool	To be proposed		
2.A.8.1.4	Scenario Generator Tool	To be proposed		
2.A.1.8.2	Databases	To be proposed		
2.A.1.8.2.1	Initial Terrain Database	To be proposed		
2.A.1.8.2.2	Initial Model Database	To be proposed		
2.A.1.8.2.3	Initial Map Database	To be proposed		
2.A.1.8.2.4	Initial Scenario Database	To be proposed		
2.A.8.3	Other	To be proposed		Any other tool being proposed should be itemized and cost individually.
2.B	**SOFTWARE LICENSING**			Identify the software that requires separate licensing that forms part of the overall Training System, and provide options for the software licensing, along with the associated cost.
2.B.1	Enterprise wide – renewable annually	To be proposed		
2.B.2	Enterprise wide – perpetual	To be proposed		
2.B.3	Per seat- renewable annually	To be proposed		
2.B.4	Per seat – perpetual	To be proposed		
2.B.5	Other Licensing Models	To be proposed		
2.C	**TRANSPORTATION**			Include the transportation, shipping, handling, duties and levies for all of the equipment that forms the full system.

2.C.1		To be proposed		
2.D	**INSTALLATION**			
2.D.1	***Networking inside the Facility***			Include the cost for the networking of the Training System, propose equipment to be connected to the DWAN network and associated quantities, etc.
2.D.1.1	Training System	To be proposed		
2.D.1.2	DWAN	To be proposed		
2.D.1.3	Other	To be proposed		
2.D.2	**Hardware Installation**			List the equipment required and Include the cost for all installation hardware including cabling, servers, switches, etc.
2.D.2.1		To be proposed		
2.D.3	**Software Installation**			List the equipment required and Include the cost for all installation software
2.D.3.1		To be proposed		
2.D.4	**Configuration Management**			Identify the items being configuration managed and include the cost for configuring the system components
2.D.4.1		To be proposed		
2.D.5	**Data Management**			Identify the items being data managed and include the cost for configuring the system components
2.D.5.1		To be proposed		
2.D.6	**System Integration**			Include the cost for integrating the minimum and maximum quantities of the Training System
2.D.6.1	Minimum Quantity	Lot		
2.D.6.2	Maximum Quantity	Lot		

2.D.6.3	Other	To be proposed		
2.D.7	**Site Integration**			Include the cost for integrating the minimum and maximum quantities for Training System into the site, and the various spaces of the site.
2.D.7.1	Minimum Quantity	Lot		
2.D.7.2	Maximum Quantity	Lot		
2.D.7.3	Other	To be proposed		
2.D.8	**Labour and Support**			Include all labour, travel, living, equipment rental, etc. costs
2.D.8.1		To be proposed		
2.D.9	**Commissioning and Acceptance**			List the activities associated with commissioning and acceptance both at the factory and site, and provide the associated cost.
2.D.9.1		To be proposed		
2.E	**INITIAL SUSTAINMENT PERIOD**			Include a cost for an initial sustainment period of two (2) years for the identified service categories. Provide as much granularity on the types of services that are included.
2.E.1	Engineering Support Services	To be proposed		
2.E.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
2.E.3	Supply Support Services	To be proposed		
2.E.4	Training Support Services	To be proposed		
2.E.5	Operating Support Services	To be proposed		
2.E.6	Information Management Services	To be proposed		
2.F	**ADDITIONAL COSTS**			

2.F.1.1		To be proposed		***2.F.1***	***Prog***
2.F.2	***Integrated Logistics Support***				
2.F.2.1	Hardware Documentation	To be proposed		Includes drawings, test plans, test procedures, test results, etc. to perform acceptance, configuration audits and verification and validation, and accreditation activities. Cost to include translation.	
2.F.2.2	Software Documentation	To be proposed		Include sw development plan, sw user's manual, sw design documentation including data flows, configuration management plan, databases, test plans, test procedures, test cases, test results, etc. to perform audits and verification and validation, and accreditation. Cost to include translation.	
2.F.2.3	Training Manuals	To be proposed		Includes items such as Instructor/Student Manuals for the Training System	
2.F.2.4	Other Manuals	To be proposed		Include items such as, but not limited to, Maintenance manuals. Cost is to include translation.	
2.F.2.5	Hand consumables, spare parts, etc.	To be proposed		Identify and list the hand consumables and required spare parts for the overall Training System, and provide the associated cost.	
2.F.2.6	Other	To be proposed			
2.F.3	***Other***			*Identify additional cost items, and provide the associated cost.*	
2.F.3.1		To be proposed			
2.G	**LONG TERM SUSTAINMENT**			Provide options for long term sustainment, over up to 23 years, for the types of services listed.	
2.G.1	Engineering Support Services	To be proposed			
2.G.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.	
2.G.3	Supply Support Services	To be proposed			

2.G.4	Training Support Services	To be proposed		
2.G.5	Operating Support Services	To be proposed		
2.G.6	Information Management Services	To be proposed		
2.H	**MIDLIFE REFIT**			Include the cost associated with a mid-life refit at 15 years.
2.H.1	Training System	To be proposed		Include in this cost all cost items to conduct a full midlife refit of the Training System
2.H.2	Facility and Infrastructure	To be proposed		Include in this cost all cost items to conduct a midlife refit of the facility and associated infrastructure
2.H.3	Other	To be proposed		

Item	Description	Quantity	Cost	Comment
3	**CFB VALCARTIER SITE COST ESTIMATE**			Include the cost estimates for CFB Valcartier site, exclusive of the NRE.
3.A	**PRODUCTION**			Include the production costs, including testing until the item is ready for shipping to the site.
3.A.1	***Simulators***			Include the production costs, including testing until the item is ready for shipping to the site.
3.A.1.1	**LCSS Simulator Suite - Battle Management System**			Include the cost for the Battle Management System simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: One simulator per vehicle
3.A.1.1.1	Battle Management System	38		
3.A.1.1.2	Battle Management System - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the Battle Management system, the AAR and EXCON Capabilities, as well as the IOS.

3.A.1.2	**LCSS Simulator Suite -Intercom**			Include the cost for the Intercom simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per vehicle
3.A.1.2.1	Intercom	178		
3.A.1.2.2	Intercom - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
3.A.1.3	**LCSS Simulator Suite -Command Net Radio**			Include the cost for the command net radio simulators that are part of the core Training System (Simulators and the two types of student workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per person actively involved in a training event.
3.A.1.3.1	Command Net Radio	136		
3.A.1.3.2	Command Net Radio - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
3.A.1.4	**LAV 6.0 – Driver Module Simulator**			
3.A.1.4.1	Quantity	4		
3.A.1.5	**LAV 6.0 – Turret Module**			
3.A.1.5.1	Quantity	4		
3.A.1.6	**Reconfigurable Workstations (LAV 6.0, LEO 0, TAPV)**			
3.A.1.6.1	Driver Station	24		
3.A.1.6.2	Crew Commander Station	24		
3.A.1.6.3	Gunner Station	24		
3.A.1.6.4	Variant Station	24		
3.A.1.7	**Standard Workstations**			
3.A.1.7.1	In Training Classroom	60		The quantity only reflects the number of stations in the Training Classroom.

3.A.1.7.2	In other areas	To be proposed		Identify the number of additional workstations that are being proposed for the EXCON and AAR capability, etc. and the associated cost.
3.A.2	**IOS**			
3.A.2.1	In Training Classroom	10		The quantity only reflects the number of stations in the Training Classroom.
3.A.2.2	In other areas	To be proposed		Identify the number of additional stations that are being proposed for the EXCON and AAR capability, and associated cost.
3.A.3	**Learning Management System**			Identify the components being proposed for the capability and cost each component individually.
3.A.3.1		To be proposed		
3.A.4	**Synthetic Environment**			Identify the components being proposed for the capability and cost each component individually.
3.A.4.1		To be proposed		
3.A.5	**Other – Simulation Hall Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
3.A.5.1		To be proposed		
3.A.6	**Other – Training and Operations Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
3.A.6.1		To be proposed		
3.A.7	**Other – Support Group**			The components being proposed for the capability in the Facility space dedicated to the Support Group should be itemized and costed individually.
3.A.7.1		To be proposed		
3.A.8	**Other**			
3.A.8.1	Tools	To be proposed		

3.A.8.1.1	Terrain Generator Tool	To be proposed		
3.A.8.1.2	3D Model Generator Tool	To be proposed		
3.A.8.1.3	Map Generator Tool	To be proposed		
3.A.8.1.4	Scenario Generator Tool	To be proposed		
3.A.1.8.2	Databases	To be proposed		
3.A.1.8.2.1	Initial Terrain Database	To be proposed		
3.A.1.8.2.2	Initial Model Database	To be proposed		
3.A.1.8.2.3	Initial Map Database	To be proposed		
3.A.1.8.2.4	Initial Scenario Database	To be proposed		
3.A.8.3	Other	To be proposed		Any other tool being proposed should be itemized and costed individually.
3.B	**SOFTWARE LICENSING**			Identify the software that requires separate licensing that forms part of the overall Training System, and provide options for the software licensing, along with the associated cost.
3.B.1	Enterprise wide – renewable annually	To be proposed		
3.B.2	Enterprise wide – perpetual	To be proposed		
3.B.3	Per seat- renewable annually	To be proposed		
3.B.4	Per seat – perpetual	To be proposed		

3.B.5	Other Licensing Models	To be proposed		
3.C	**TRANSPORTATION**			Include the transportation, shipping, handling, duties and levies for all of the equipment that forms the full system.
3.C.1		To be proposed		
3.D	**INSTALLATION**			
3.D.1	***Networking inside the Facility***			Include the cost for the networking of the Training System, propose equipment to be connected to the DWAN network and associated quantities, etc.
3.D.1.1	Training System	To be proposed		
3.D.1.2	DWAN	To be proposed		
3.D.1.3	Other	To be proposed		
3.D.2	**Hardware Installation**			List the equipment required and Include the cost for all installation hardware including cabling, servers, switches, etc.
3.D.2.1		To be proposed		
3.D.3	**Software Installation**			List the equipment required and Include the cost for all installation software
3.D.3.1		To be proposed		
3.D.4	**Configuration Management**			Identify the items being configuration managed and include the cost for configuring the system components
3.D.4.1		To be proposed		
3.D.5	**Data Management**			Identify the items being data managed and include the cost for configuring the system components
3.D.5.1		To be proposed		

3.D.6	**System Integration**			Include the cost for integrating the Training System
3.D.6.1	Required quantity	Lot		
3.D.6.2	Other	To be proposed		
3.D.7	**Site Integration**			Include the cost for integrating the Training System into the site, and the various spaces of the site.
3.D.7.1	Required quantity	Lot		
3.D.7.2	Other	To be proposed		
3.D.8	**Labour and Support**			Include all labour, travel, living, equipment rental, etc. costs
3.D.8.1		To be proposed		
3.D.9	**Commissioning and Acceptance**			List the activities associated with commissioning and acceptance both at the factory and site, and provide the associated cost.
3.D.9.1		To be proposed		
3.E	**INITIAL SUSTAINMENT PERIOD**			Include a cost for an initial sustainment period of two (2) years for the identified service categories. Provide as much granularity on the types of services that are included.
3.E.1	Engineering Support Services	To be proposed		
3.E.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
3.E.3	Supply Support Services	To be proposed		
3.E.4	Training Support Services	To be proposed		
3.E.5	Operating Support Services	To be proposed		
3.E.6	Information Management Services	To be proposed		

3.F	**ADDITIONAL COSTS**			
3.F.1	***Program/Project Management***			Include cost for program and project management such as: Project management master plan, contract work breakdown structure, Project master schedule, progress reporting and reviews, planned and ad-hoc meetings; risk management plan, registers, and reporting; travel and living expenses for meetings.
3.F.1.1		To be proposed		
3.F.2	***Integrated Logistics Support***			
3.F.2.1	Hardware Documentation	To be proposed		Includes drawings, test plans, test procedures, test results, etc. to perform acceptance, configuration audits and verification and validation, and accreditation activities. Cost to include translation.
3.F.2.2	Software Documentation	To be proposed		Include sw development plan, sw user's manual, sw design documentation including data flows, configuration management plan, databases, test plans, test procedures, test cases, test results, etc. to perform audits and verification and validation, and accreditation. Cost to include translation.
3.F.2.3	Training Manuals	To be proposed		Includes items such as Instructor/Student Manuals for the Training System
3.F.2.4	Other Manuals	To be proposed		Include items such as, but not limited to, Maintenance manuals. Cost is to include translation.
3.F.2.5	Hand consumables, spare parts, etc.	To be proposed		Identify and list the hand consumables and required spare parts for the overall Training System, and provide the associated cost.
3.F.2.6	Other	To be proposed		
3.F.3	***Other***			*Identify additional cost items, and provide the associated cost.*
3.F.3.1		To be proposed		
3.G	**LONG TERM SUSTAINMENT**			Provide options for long term sustainment, over up to 23 years, for the types of services listed.
3.G.1	Engineering Support Services	To be proposed		

3.G.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
3.G.3	Supply Support Services	To be proposed		
3.G.4	Training Support Services	To be proposed		
3.G.5	Operating Support Services	To be proposed		
3.G.6	Information Management Services	To be proposed		
3.H	**MIDLIFE REFIT**			Include the cost associated with a mid-life refit at 15 years.
3.H.1	Training System	To be proposed		Include in this cost all cost items to conduct a full midlife refit of the Training System.
3.H.2	Facility and Infrastructure	To be proposed		Include in this cost all cost items to conduct a midlife refit of the facility and associated infrastructure.
3.H.3	Other	To be proposed		

Item	Description	Quantity	Cost	Comment
4	**CFB PETAWAWA SITE COST ESTIMATE**			Include the cost estimates for CFB Petawawa site, exclusive of the NRE.
4.A	**PRODUCTION**			Include the production costs, including testing until the item is ready for shipping to the site.
4.A.1	***Simulators***			Include the production costs, including testing until the item is ready for shipping to the site.
4.A.1.1	**LCSS Simulator Suite - Battle Management System**			Include the cost for the Battle Management System simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: One simulator per vehicle
4.A.1.1.1	Battle Management System	38		

4.A.1.1.2	Battle Management System - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the Battle Management system, the AAR and EXCON Capabilities, as well as the IOS.
4.A.1.2	**LCSS Simulator Suite -Intercom**			Include the cost for the Intercom simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per vehicle
4.A.1.2.1	Intercom	178		
4.A.1.2.2	Intercom - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
4.A.1.3	**LCSS Simulator Suite -Command Net Radio**			Include the cost for the command net radio simulators that are part of the core Training System (Simulators and the two types of student workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per person actively involved in a training event.
4.A.1.3.1	Command Net Radio	136		
4.A.1.3.2	Command Net Radio - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
4.A.1.4	**LAV 6.0 – Driver Module Simulator**			
4.A.1.4.1	Quantity	4		
4.A.1.5	**LAV 6.0 – Turret Module**			
4.A.1.5.1	Quantity	4		
4.A.1.6	**Reconfigurable Workstations (LAV 6.0, LEO 0, TAPV)**			
4.A.1.6.1	Driver Station	24		
4.A.1.6.2	Crew Commander Station	24		
4.A.1.6.3	Gunner Station	24		
4.A.1.6.4	Variant Station	24		

4.A.1.7	**Standard Workstations**			
4.A.1.7.1	In Training Classroom	60		The quantity only reflects the number of stations in the Training Classroom.
4.A.1.7.2	In other areas	To be proposed		Identify the number of additional workstations that are being proposed for the EXCON and AAR capability, etc. and the associated cost.
4.A.2	**IOS**			
4.A.2.1	In Training Classroom	10		The quantity only reflects the number of stations in the Training Classroom.
4.A.2.2	In other areas	To be proposed		Identify the number of additional stations that are being proposed for the EXCON and AAR capability, and associated cost.
4.A.3	**Learning Management System**			Identify the components being proposed for the capability and cost each component individually.
4.A.3.1		To be proposed		
4.A.4	**Synthetic Environment**			Identify the components being proposed for the capability and cost each component individually.
4.A.4.1		To be proposed		
4.A.5	**Other – Simulation Hall Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
4.A.5.1		To be proposed		
4.A.6	**Other – Training and Operations Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
4.A.6.1		To be proposed		
4.A.7	**Other – Support Group**			The components being proposed for the capability in the Facility space dedicated to the Support Group should be itemized and costed individually.
4.A.7.1		To be proposed		

4.A.8	**Other**			
4.A.8.1	Tools	To be proposed		
4.A.8.1.1	Terrain Generator Tool	To be proposed		
4.A.8.1.2	3D Model Generator Tool	To be proposed		
4.A.8.1.3	Map Generator Tool	To be proposed		
4.A.8.1.4	Scenario Generator Tool	To be proposed		
4.A.1.8.2	Databases	To be proposed		
4.A.1.8.2.1	Initial Terrain Database	To be proposed		
4.A.1.8.2.2	Initial Model Database	To be proposed		
4.A.1.8.2.3	Initial Map Database	To be proposed		
4.A.1.8.2.4	Initial Scenario Database	To be proposed		
4.A.8.3	Other	To be proposed		Any other tool being proposed should be itemized and costed individually.
4.B	**SOFTWARE LICENSING**			Identify the software that requires separate licensing that forms part of the overall Training System, and provide options for the software licensing, along with the associated cost.
4.B.1	Enterprise wide – renewable annually	To be proposed		
4.B.2	Enterprise wide – perpetual	To be proposed		
4.B.3	Per seat- renewable annually	To be proposed		

4.B.4	Per seat – perpetual	To be proposed		
4.B.5	Other Licensing Models	To be proposed		
4.C	**TRANSPORTATION**			Include the transportation, shipping, handling, duties and levies for all of the equipment that forms the full system.
4.C.1		To be proposed		
4.D	**INSTALLATION**			
4.D.1	***Networking inside the Facility***			Include the cost for the networking of the Training System, propose equipment to be connected to the DWAN network and associated quantities, etc.
4.D.1.1	Training System	To be proposed		
4.D.1.2	DWAN	To be proposed		
4.D.1.3	Other	To be proposed		
4.D.2	**Hardware Installation**			List the equipment required and Include the cost for all installation hardware including cabling, servers, switches, etc.
4.D.2.1		To be proposed		
4.D.3	**Software Installation**			List the equipment required and Include the cost for all installation software
4.D.3.1		To be proposed		
4.D.4	**Configuration Management**			Identify the items being configuration managed and include the cost for configuring the system components
4.D.4.1		To be proposed		
4.D.5	**Data Management**			Identify the items being data managed and include the cost for configuring the system components

4.D.5.1		To be proposed		
4.D.6	**System Integration**			Include the cost for integrating the Training System
4.D.6.1	Required quantity	Lot		
4.D.6.2	Other	To be proposed		
4.D.7	**Site Integration**			Include the cost for integrating the Training System into the site, and the various spaces of the site.
4.D.7.1	Required quantity	Lot		
4.D.7.2	Other	To be proposed		
4.D.8	**Labour and Support**			Include all labour, travel, living, equipment rental, etc. costs
4.D.8.1		To be proposed		
4.D.9	**Commissioning and Acceptance**			List the activities associated with commissioning and acceptance both at the factory and site, and provide the associated cost.
4.D.9.1		To be proposed		
4.E	**INITIAL SUSTAINMENT PERIOD**			Include a cost for an initial sustainment period of two (2) years for the identified service categories. Provide as much granularity on the types of services that are included.
4.E.1	Engineering Support Services	To be proposed		
4.E.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
4.E.3	Supply Support Services	To be proposed		
4.E.4	Training Support Services	To be proposed		
4.E.5	Operating Support Services	To be proposed		

4.E.6	Information Management Services	To be proposed		
4.F	**ADDITIONAL COSTS**			
4.F.1	***Program/Project Management***			Include cost for program and project management such as: Project management master plan, contract work breakdown structure, Project master schedule, progress reporting and reviews, planned and ad-hoc meetings; risk management plan, registers, and reporting; travel and living expenses for meetings.
4.F.1.1		To be proposed		
4.F.2	***Integrated Logistics Support***			
4.F.2.1	Hardware Documentation	To be proposed		Includes drawings, test plans, test procedures, test results, etc. to perform acceptance, configuration audits and verification and validation, and accreditation activities. Cost to include translation.
4.F.2.2	Software Documentation	To be proposed		Include sw development plan, sw user's manual, sw design documentation including data flows, configuration management plan, databases, test plans, test procedures, test cases, test results, etc. to perform audits and verification and validation, and accreditation. Cost to include translation.
4.F.2.3	Training Manuals	To be proposed		Includes items such as Instructor/Student Manuals for the Training System.
4.F.2.4	Other Manuals	To be proposed		Include items such as, but not limited to, Maintenance manuals. Cost is to include translation.
4.F.2.5	Hand consumables, spare parts, etc.	To be proposed		Identify and list the hand consumables and required spare parts for the overall Training System, and provide the associated cost.
4.F.2.6	Other	To be proposed		
4.F.3	***Other***			*Identify additional cost items, and provide the associated cost.*
4.F.3.1		To be proposed		
4.G	**LONG TERM SUSTAINMENT**			Provide options for long term sustainment, over up to 23 years, for the types of services listed.

4.G.1	Engineering Support Services	To be proposed		
4.G.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
4.G.3	Supply Support Services	To be proposed		
4.G.4	Training Support Services	To be proposed		
4.G.5	Operating Support Services	To be proposed		
4.G.6	Information Management Services	To be proposed		
4.H	**MIDLIFE REFIT**			Include the cost associated with a mid-life refit at 15 years.
4.H.1	Training System	To be proposed		Include in this cost all cost items to conduct a full midlife refit of the Training System.
4.H.2	Facility and Infrastructure	To be proposed		Include in this cost all cost items to conduct a midlife refit of the facility and associated infrastructure.
4.H.3	Other	To be proposed		

Item	Description	Quantity	Cost	Comment
5	**CFB SHILO SITE COST ESTIMATE**			Include the cost estimates for CFB Shilo site, exclusive of the NRE.
5.A	**PRODUCTION**			Include the production costs, including testing until the item is ready for shipping to the site.
5.A.1	***Simulators***			Include the production costs, including testing until the item is ready for shipping to the site.
5.A.1.1	**LCSS Simulator Suite - Battle Management System**			Include the cost for the Battle Management System simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: One simulator per vehicle
5.A.1.1.1	Battle Management System	38		

5.A.1.1.2	Battle Management System - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the Battle Management system, the AAR and EXCON Capabilities, as well as the IOS.
5.A.1.2	**LCSS Simulator Suite -Intercom**			Include the cost for the Intercom simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per vehicle
5.A.1.2.1	Intercom	178		
5.A.1.2.2	Intercom - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
5.A.1.3	**LCSS Simulator Suite -Command Net Radio**			Include the cost for the command net radio simulators that are part of the core Training System (Simulators and the two types of student workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per person actively involved in a training event.
5.A.1.3.1	Command Net Radio	136		
5.A.1.3.2	Command Net Radio - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
5.A.1.4	**LAV 6.0 – Driver Module Simulator**			
5.A.1.4.1	Quantity	4		
5.A.1.5	**LAV 6.0 – Turret Module**			
5.A.1.5.1	Quantity	4		
5.A.1.6	**Reconfigurable Workstations (LAV 6.0, LEO 0, TAPV)**			
5.A.1.6.1	Driver Station	24		
5.A.1.6.2	Crew Commander Station	24		
5.A.1.6.3	Gunner Station	24		
5.A.1.6.4	Variant Station	24		

5.A.1.7	**Standard Workstations**			
5.A.1.7.1	In Training Classroom	60		The quantity only reflects the number of stations in the Training Classroom.
5.A.1.7.2	In other areas	To be proposed		Identify the number of additional workstations that are being proposed for the EXCON and AAR capability, etc. and the associated cost.
5.A.2	**IOS**			
5.A.2.1	In Training Classroom	10		The quantity only reflects the number of stations in the Training Classroom.
5.A.2.2	In other areas	To be proposed		Identify the number of additional stations that are being proposed for the EXCON and AAR capability, and associated cost.
5.A.3	**Learning Management System**			Identify the components being proposed for the capability and cost each component individually.
5.A.3.1		To be proposed		
5.A.4	**Synthetic Environment**			Identify the components being proposed for the capability and cost each component individually.
5.A.4.1		To be proposed		
5.A.5	**Other – Simulation Hall Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
5.A.5.1		To be proposed		
5.A.6	**Other – Training and Operations Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
5.A.6.1		To be proposed		
5.A.7	**Other – Support Group**			The components being proposed for the capability in the Facility space dedicated to the Support Group should be itemized and costed individually.
5.A.7.1		To be proposed		

5.A.8	**Other**			
5.A.8.1	Tools	To be proposed		
5.A.8.1.1	Terrain Generator Tool	To be proposed		
5.A.8.1.2	3D Model Generator Tool	To be proposed		
5.A.8.1.3	Map Generator Tool	To be proposed		
5.A.8.1.4	Scenario Generator Tool	To be proposed		
5.A.1.8.2	Databases	To be proposed		
5.A.1.8.2.1	Initial Terrain Database	To be proposed		
5.A.1.8.2.2	Initial Model Database	To be proposed		
5.A.1.8.2.3	Initial Map Database	To be proposed		
5.A.1.8.2.4	Initial Scenario Database	To be proposed		
5.A.8.3	Other	To be proposed		Any other tool being proposed should be itemized and costed individually.
5.B	**SOFTWARE LICENSING**			Identify the software that requires separate licensing that forms part of the overall Training System, and provide options for the software licensing, along with the associated cost.
5.B.1	Enterprise wide – renewable annually	To be proposed		
5.B.2	Enterprise wide – perpetual	To be proposed		
5.B.3	Per seat- renewable annually	To be proposed		

5.B.4	Per seat – perpetual	To be proposed		
5.B.5	Other Licensing Models	To be proposed		
5.C	**TRANSPORTATION**			Include the transportation, shipping, handling, duties and levies for all of the equipment that forms the full system.
5.C.1		To be proposed		
5.D	**INSTALLATION**			
5.D.1	***Networking inside the Facility***			Include the cost for the networking of the Training System, propose equipment to be connected to the DWAN network and associated quantities, etc.
5.D.1.1	Training System	To be proposed		
5.D.1.2	DWAN	To be proposed		
5.D.1.3	Other	To be proposed		
5.D.2	**Hardware Installation**			List the equipment required and Include the cost for all installation hardware including cabling, servers, switches, etc.
5.D.2.1		To be proposed		
5.D.3	**Software Installation**			List the equipment required and Include the cost for all installation software.
5.D.3.1		To be proposed		
5.D.4	**Configuration Management**			Identify the items being configuration managed and include the cost for configuring the system components.
5.D.4.1		To be proposed		
5.D.5	**Data Management**			Identify the items being data managed and include the cost for configuring the system components.

5.D.5.1		To be proposed		
5.D.6	**System Integration**			Include the cost for integrating the Training System.
5.D.6.1	Required quantity	Lot		
5.D.6.2	Other	To be proposed		
5.D.7	**Site Integration**			Include the cost for integrating the Training System into the site, and the various spaces of the site.
5.D.7.1	Required quantity	Lot		
5.D.7.2	Other	To be proposed		
5.D.8	**Labour and Support**			Include all labour, travel, living, equipment rental, etc. costs.
5.D.8.1		To be proposed		
5.D.9	**Commissioning and Acceptance**			List the activities associated with commissioning and acceptance both at the factory and site, and provide the associated cost.
5.D.9.1		To be proposed		
5.E	**INITIAL SUSTAINMENT PERIOD**			Include a cost for an initial sustainment period of two (2) years for the identified service categories. Provide as much granularity on the types of services that are included.
5.E.1	Engineering Support Services	To be proposed		
5.E.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
5.E.3	Supply Support Services	To be proposed		
5.E.4	Training Support Services	To be proposed		
5.E.5	Operating Support Services	To be proposed		

5.E.6	Information Management Services	To be proposed		
5.F	**ADDITIONAL COSTS**			
5.F.1	***Program/Project Management***			Include cost for program and project management such as: Project management master plan, contract work breakdown structure, Project master schedule, progress reporting and reviews, planned and ad-hoc meetings; risk management plan, registers, and reporting; travel and living expenses for meetings.
5.F.1.1		To be proposed		
5.F.2	***Integrated Logistics Support***			
5.F.2.1	Hardware Documentation	To be proposed		Includes drawings, test plans, test procedures, test results, etc. to perform acceptance, configuration audits and verification and validation, and accreditation activities. Cost to include translation.
5.F.2.2	Software Documentation	To be proposed		Include sw development plan, sw user's manual, sw design documentation including data flows, configuration management plan, databases, test plans, test procedures, test cases, test results, etc. to perform audits and verification and validation, and accreditation. Cost to include translation.
5.F.2.3	Training Manuals	To be proposed		Includes items such as Instructor/Student Manuals for the Training System.
5.F.2.4	Other Manuals	To be proposed		Include items such as, but not limited to, Maintenance manuals. Cost is to include translation.
5.F.2.5	Hand consumables, spare parts, etc.	To be proposed		Identify and list the hand consumables and required spare parts for the overall Training System, and provide the associated cost.
5.F.2.6	Other	To be proposed		
5.F.3	***Other***			*Identify additional cost items, and provide the associated cost.*
5.F.3.1		To be proposed		
5.G	**LONG TERM SUSTAINMENT**			Provide options for long term sustainment, over up to 23 years, for the types of services listed.

5.G.1	Engineering Support Services	To be proposed		
5.G.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
5.G.3	Supply Support Services	To be proposed		
5.G.4	Training Support Services	To be proposed		
5.G.5	Operating Support Services	To be proposed		
5.G.6	Information Management Services	To be proposed		
5.H	**MIDLIFE REFIT**			Include the cost associated with a mid-life refit at 15 years.
5.H.1	Training System	To be proposed		Include in this cost all cost items to conduct a full midlife refit of the Training System.
5.H.2	Facility and Infrastructure	To be proposed		Include in this cost all cost items to conduct a midlife refit of the facility and associated infrastructure.
5.H.3	Other	To be proposed		

Item	Description	Quantity	Cost	Comment
6	**CFB EDMONTON SITE COST ESTIMATE**			Include the cost estimates for CFB Edmonton site, exclusive of the NRE.
6.A	**PRODUCTION**			Include the production costs, including testing until the item is ready for shipping to the site.
6.A.1	***Simulators***			Include the production costs, including testing until the item is ready for shipping to the site.
6.A.1.1	**LCSS Simulator Suite - Battle Management System**			Include the cost for the Battle Management System simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: One simulator per vehicle.

6.A.1.1.1	Battle Management System - Minimum quantity	46		
6.A.1.1.2	Battle Management System - Maximum quantity	50		
6.A.1.1.3	Battle Management System - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the Battle Management system, the AAR and EXCON Capabilities, as well as the IOS.
6.A.1.2	**LCSS Simulator Suite -Intercom**			Include the cost for the Intercom simulators that are part of the core Training System (Simulators and the reconfigurable workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per vehicle.
6.A.1.2.1	Intercom - Minimum quantity	198		
6.A.1.2.2	Intercom - Maximum quantity	214		
6.A.1.2.3	Intercom - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
6.A.1.3	**LCSS Simulator Suite -Command Net Radio**			Include the cost for the command net radio simulators that are part of the core Training System (Simulators and the two types of student workstations) and the additional quantities being proposed for the AAR and EXCON capabilities, as well as the IOS. Note: one per person actively involved in a training event.
6.A.1.3.1	Command Net Radio - Minimum quantity	156		
6.A.1.3.2	Command Net Radio - Maximum quantity	168		
6.A.1.3.3	Command Net Radio - additional quantities being proposed	To be proposed		Identify the quantity being proposed and associated cost for the intercom simulator, the AAR and EXCON Capabilities, as well as the IOS.
6.A.1.4	**LAV 6.0 – Driver Module Simulator**			
6.A.1.4.1	Required quantity	4		

6.A.1.5	**LAV 6.0 – Turret Module**			
6.A.1.5.1	Required quantity	4		
6.A.1.6	**LEO 2 – Driver Module**			
6.A.1.6.1	Minimum quantity	4		
6.A.1.6.2	Maximum quantity	8		
6.A.1.7	**LEO 2 – Turret Module**			
6.A.1.7.1	Minimum quantity	4		
6.A.1.7.2	Maximum quantity	8		
6.A.1.8	**LEO 2 - LGST Integration**			
6.A.1.8.1	Minimum quantity	4		
6.A.1.8.2	Maximum quantity	8		
6.A.1.9	**LEO 2 – LGST, with new Loader functionality, Integration**			
6.A.1.9.1	Minimum quantity	4		
6.A.1.9.2	Maximum quantity	8		
6.A.1.10	**Reconfigurable Workstations (LAV 6.0, LEO 0, TAPV)**			
6.A.1.10.1	Driver Station	24		
6.A.1.10.2	Crew Commander Station	24		
6.A.1.10.3	Gunner Station	24		
6.A.1.10.4	Variant Station	24		
6.A.1.11	**Standard Workstations**			
6.A.1.11.1	In Training Classroom	60		The quantity only reflects the number of stations in the Training Classroom.
6.A.1.11.2	In other areas	To be proposed		Identify the number of additional workstations that are being proposed for the EXCON and AAR capability, etc. and the associated cost.
6.A.2	**IOS**			
6.A.2.1	In Training Classroom	14		The quantity only reflects the number of stations in the Training Classroom.

6.A.2.2	In other areas	To be proposed		Identify the number of additional stations that are being proposed for the EXCON and AAR capability, and associated cost.
6.A.3	**Learning Management System**			Identify the components being proposed for the capability and cost each component individually.
6.A.3.1		To be proposed		
6.A.4	**Synthetic Environment**			Identify the components being proposed for the capability and cost each component individually.
6.A.4.1		To be proposed		
6.A.5	**Other – Simulation Hall Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
6.A.5.1		To be proposed		
6.A.6	**Other – Training and Operations Group**			The components being proposed for the capability in the Facility space dedicated to the Training and Operations Group should be itemized and costed individually.
6.A.6.1		To be proposed		
6.A.7	**Other – Support Group**			The components being proposed for the capability in the Facility space dedicated to the Support Group should be itemized and costed individually.
6.A.7.1		To be proposed		
6.A.8	**Other**			
6.A.8.1	Tools	To be proposed		
6.A.8.1.1	Terrain Generator Tool	To be proposed		
6.A.8.1.2	3D Model Generator Tool	To be proposed		

6.A.8.1.3	Map Generator Tool	To be proposed		
6.A.8.1.4	Scenario Generator Tool	To be proposed		
6.A.1.8.2	Databases	To be proposed		
6.A.1.8.2.1	Initial Terrain Database	To be proposed		
6.A.1.8.2.2	Initial Model Database	To be proposed		
6.A.1.8.2.3	Initial Map Database	To be proposed		
6.A.1.8.2.4	Initial Scenario Database	To be proposed		
6.A.8.3	Other	To be proposed		Any other tool being proposed should be itemized and costed individually.
6.B	**SOFTWARE LICENSING**			Identify the software that requires separate licensing that forms part of the overall Training System, and provide options for the software licensing, along with the associated cost.
6.B.1	Enterprise wide – renewable annually	To be proposed		
6.B.2	Enterprise wide – perpetual	To be proposed		
6.B.3	Per seat- renewable annually	To be proposed		
6.B.4	Per seat – perpetual	To be proposed		
6.B.5	Other Licensing Models	To be proposed		
6.C	**TRANSPORTATION**			Include the transportation, shipping, handling, duties and levies for all of the equipment that forms the full system.

6.C.1		To be proposed		
6.D	**INSTALLATION**			
6.D.1	***Networking inside the Facility***			Include the cost for the networking of the Training System, propose equipment to be connected to the DWAN network and associated quantities, etc.
6.D.1.1	Training System	To be proposed		
6.D.1.2	DWAN	To be proposed		
6.D.1.3	Other	To be proposed		
6.D.2	**Hardware Installation**			List the equipment required and Include the cost for all installation hardware including cabling, servers, switches, etc.
6.D.2.1		To be proposed		
6.D.3	**Software Installation**			List the equipment required and Include the cost for all installation software
6.D.3.1		To be proposed		
6.D.4	**Configuration Management**			Identify the items being configuration managed and include the cost for configuring the system components
6.D.4.1		To be proposed		
6.D.5	**Data Management**			Identify the items being data managed and include the cost for configuring the system components
6.D.5.1		To be proposed		
6.D.6	**System Integration**			Include the cost for integrating the minimum and maximum quantities of the Training System
6.D.6.1	Minimum Quantity	Lot		
6.D.6.2	Maximum Quantity	Lot		

6.D.6.3	Other	To be proposed		
6.D.7	**Site Integration**			Include the cost for integrating the minimum and maximum quantities for Training System into the site, and the various spaces of the site.
6.D.7.1	Minimum Quantity	Lot		
6.D.7.2	Maximum Quantity	Lot		
6.D.7.3	Other	To be proposed		
6.D.8	**Labour and Support**			Include all labour, travel, living, equipment rental, etc. costs
6.D.8.1		To be proposed		
6.D.9	**Commissioning and Acceptance**			List the activities associated with commissioning and acceptance both at the factory and site, and provide the associated cost.
6.D.9.1		To be proposed		
6.E	**INITIAL SUSTAINMENT PERIOD**			Include a cost for an initial sustainment period of two (2) years for the identified service categories. Provide as much granularity on the types of services that are included.
6.E.1	Engineering Support Services	To be proposed		
6.E.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.
6.E.3	Supply Support Services	To be proposed		
6.E.4	Training Support Services	To be proposed		
6.E.5	Operating Support Services	To be proposed		
6.E.6	Information Management Services	To be proposed		
6.F	**ADDITIONAL COSTS**			

6.F.1	***Program/Project Management***			Include cost for program and project management such as: Project management master plan, contract work breakdown structure, Project master schedule, progress reporting and reviews, planned and ad-hoc meetings; risk management plan, registers, and reporting; travel and living expenses for meetings.
6.F.1.1		To be proposed		
6.F.2	***Integrated Logistics Support***			
6.F.2.1	Hardware Documentation	To be proposed		Includes drawings, test plans, test procedures, test results, etc. to perform acceptance, configuration audits and verification and validation, and accreditation activities. Cost to include translation.
6.F.2.2	Software Documentation	To be proposed		Include sw development plan, sw user's manual, sw design documentation including data flows, configuration management plan, databases, test plans, test procedures, test cases, test results, etc. to perform audits and verification and validation, and accreditation. Cost to include translation.
6.F.2.3	Training Manuals	To be proposed		Includes items such as Instructor/Student Manuals for the Training System
6.F.2.4	Other Manuals	To be proposed		Include items such as, but not limited to, Maintenance manuals. Cost is to include translation.
6.F.2.5	Hand consumables, spare parts, etc.	To be proposed		Identify and list the hand consumables and required spare parts for the overall Training System, and provide the associated cost.
6.F.2.6	Other	To be proposed		
6.F.3	***Other***			*Identify additional cost items, and provide the associated cost.*
6.F.3.1		To be proposed		
6.G	**LONG TERM SUSTAINMENT**			Provide options for long term sustainment, over up to 23 years, for the types of services listed.
6.G.1	Engineering Support Services	To be proposed		
6.G.2	Maintenance Support Services	To be proposed		In addition to maintenance support services, also include the options and cost for the various licensed Software that form the solution.

6.G.3	Supply Support Services	To be proposed		
6.G.4	Training Support Services	To be proposed		
6.G.5	Operating Support Services	To be proposed		
6.G.6	Information Management Services	To be proposed		
6.H	**MIDLIFE REFIT**			Include the cost associated with a mid-life refit at 15 years.
6.H.1	Training System	To be proposed		Include in this cost all cost items to conduct a full midlife refit of the Training System.
6.H.2	Facility and Infrastructure	To be proposed		Include in this cost all cost items to conduct a midlife refit of the facility and associated infrastructure
6.H.3	Other	To be proposed		

ANNEX D - ACRONYMS AND DEFINITIONS

List of Acronyms:

Acronym	Description
AARs	After Action Reviews
CA	Canadian Army
CAF	Canadian Armed Forces
CFB	Canadian Forces Bases
CGEs	Computer Generated Entities
CGF	Computer Generated Force
CLCA's	Comprehensive Land Claim Agreements
CNR	Combat Net Radio
COP	Common Operational Picture
CSS	Combat Service Support
DIS	Distributed Interactive Simulation
DND	Department of National Defence
DWAN	Defence Wide Area Network
ERC	Enhanced Reliability Clearance
EXCON	Exercise Control
FOO	Forward Observation Officer
GFE	Government Furnished Equipment
GFI	Government Furnished Information
HICON	Higher Control
HLA	High Level Architecture
HLMRs	High Level Mandatory Requirements
IEEE	Institute of Electrical and Electronics Engineers
IED	Improvised Explosive Device
ILS	Integrated Logistic Support
IOS	Instructor Observer/Controller Station
IP	Intellectual Property
IRP	Instructor and Role Players
ISED	Innovation, Science and Economic Development
ITBs	Industrial and Technological Benefits
LAV	Light Armoured Vehicle
LCSS	Land Command Support System
LEO	Leopard
LGST	Leopard Gunnery Skills Trainer

LMS	Learning Management System
LOCON	Lower Control
LVCTS	Land Vehicle Crew Training System
MBT	Main Battle Tank
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organization
NRE	Non-Recurring Engineering
OPFOR	Opposing Force
P&A	Price and Availability
PSPC	Public Services and Procurement Canada
PTA	Primary Training Audience
RFP	Request for Proposal
RWS	Remote Weapon Station
SSC	Shared Services Canada
STA	Secondary Training Audience
TAPV	Tactical Armoured Patrol Vehicle
TDP	Technical Data Package
TTP	Tactics, techniques and procedures
UAV	Unmanned Aerial Vehicle
US	United States
VP	Value Proposition
WTO-AGP	World Trade Organization – Agreement on Government Procurement

List of Definitions:

Collective Training	Collective training practises the application of doctrine, in the form of tactics, techniques and procedures (TTP), in tactical situations. Collective training focuses on producing cohesive combat-capable tactical groupings and involves the execution of battle tasks in realistic training scenarios. Individual leader participation here is a vital component of professional development. Collective competencies rely on aggregate individual competencies of unit members and leaders.
Combat Team (see figure 1 below)	A Combat Team is a combined arms grouping at the Company or squadron level. A traditional square Combat Team consists of a tank squadron, an infantry Company, an engineer troop, and an artillery observer detachment. Other combat enablers may be attached as well. Combat Teams are task tailored for a specific mission and may include any subset of the above components. For example, an infantry Company with an attached tank troop and an artillery observer detachment constitutes a Combat Team.
Company	A Company is a tactical grouping of platoons. An infantry Company consists of three (3) platoons and a Company headquarters.

Crew	A crew consists of the personnel who function together to operate a vehicle or other equipment. For the purposes of the LVCTS, a LAV 6.0 crew consists of the crew commander, gunner, and driver. A LEO 2 crew consists of a crew commander, loader, gunner, and driver. A TAPV crew consists of a crew commander, gunner, and driver.
Individual Training	Individual training prepares personnel to fulfil his/her individual role on operations, as part of a team or group. It comprises formal Institutional Training, education and professional development. It produces self-confident, disciplined soldiers and leaders who are physically fit, well-motivated, and who possess the necessary skills and knowledge to perform the duties assigned to them. Individual training is distinct because it imparts new skills, knowledge and attitudes to individuals, and it normally results in a competency being conferred;
Platoon	A platoon is a tactical grouping that includes a number of sections and a platoon headquarters. An infantry platoon consists of three (3) sections, a heavy weapons detachment, and a platoon headquarters. A mechanized platoon can be mounted in four (4) LAV 6.0 and a light platoon can be mounted in eight (8) TAPV.
Section	A section defines the lowest tactical grouping of individuals that can be mounted in a LAV 6.0 vehicle and includes the crew of the vehicle. A mounted infantry section consists of the vehicle crew and eight (8) soldiers able to dismount from the vehicle.
Squadron	A squadron is a tactical grouping of troops. An armour squadron consists of four (4) tank troops, a squadron headquarters and an administration troop. An armour reconnaissance squadron consists of three (3) reconnaissance troops, an administration troop, and a squadron headquarters. A field engineer squadron consists of three engineer field troops, a support troop, and a squadron headquarters.
Troop	A troop is a tactical grouping of armour, armour reconnaissance, engineers, or artillery. For the purposes of LVCTS, an armour troop consists of four (4) LEO 2 tanks and an armour reconnaissance troop consists of four (4) LAV Recce and four (4) TAPV vehicles.

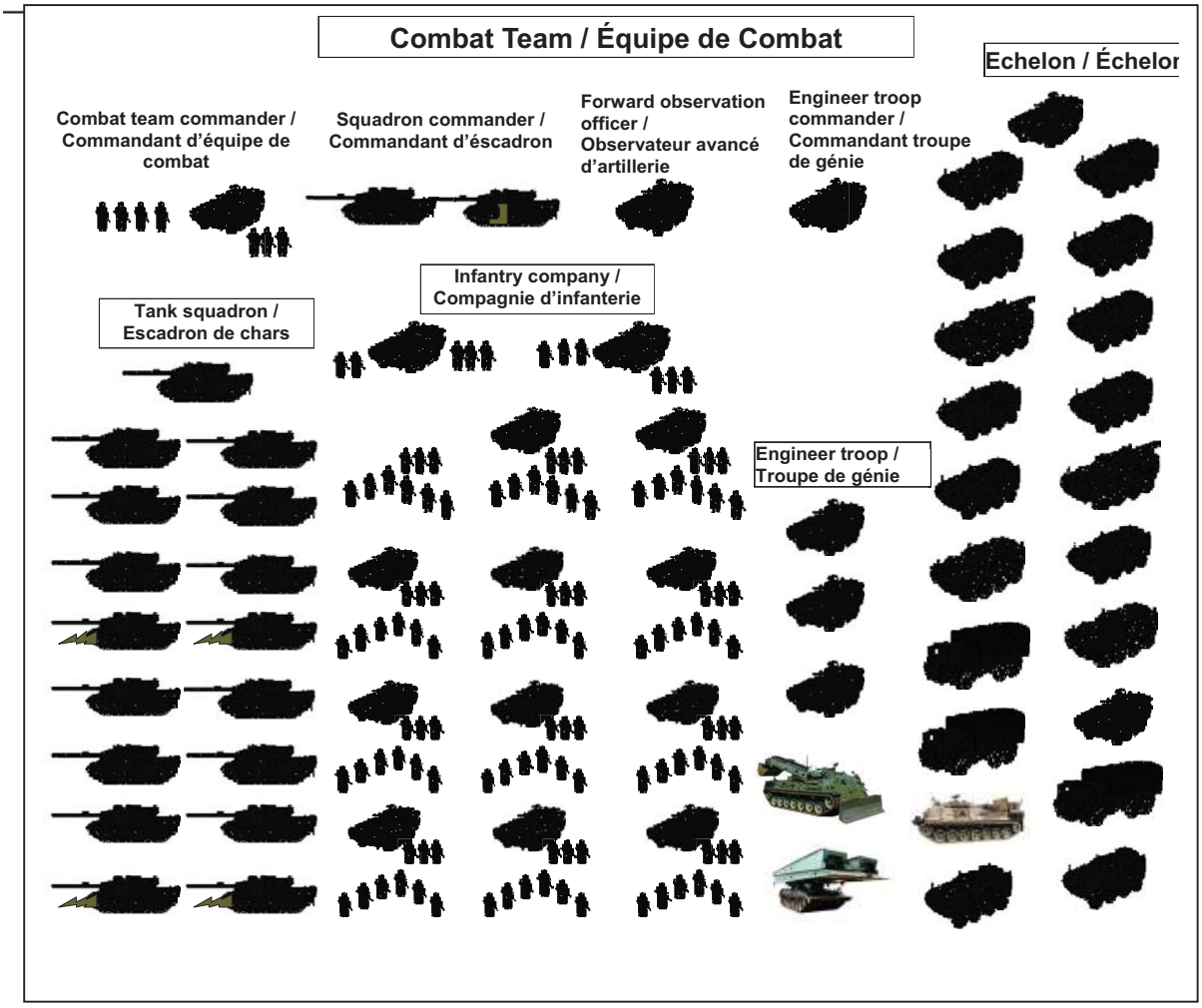


Figure 1 – Combat Team

ANNEX E - PROPOSED VALUE PROPOSITION APPROACH FOR THE LVCTS PROJECT

Proposed Value Proposition Approach for the LVCTS Project

Industrial and Technological Benefits Policy

October 2016

Objective

- The Government of Canada is consulting with industry to support the development of the Value Proposition (VP) evaluation framework for the proposed Land Vehicle Crew Training System procurement
  - Present highlights of internal market analysis
  - Seek input from industry on structuring the VP framework to best leverage this procurement to support long-term industrial benefits in Canada
- Feedback from industry provided during the request for information process will be used to inform the strategic objectives of the Value Proposition framework
- The draft Value Proposition framework will then be released for further input from industry as the project progresses

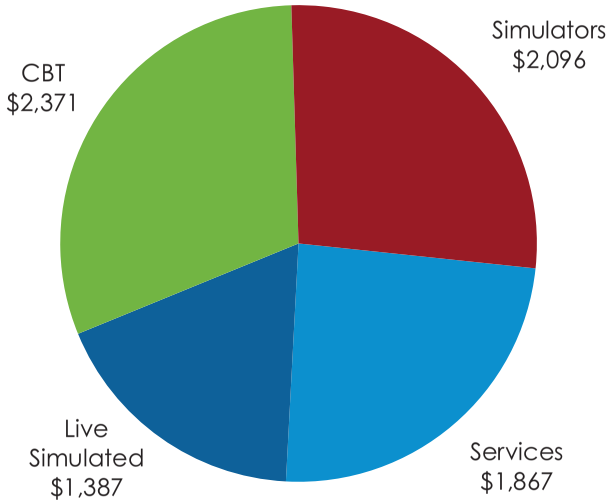
Market Research and Analysis

- Objective
  - Develop sound, factual market and bidders analysis to provide information on leveraging opportunities related to the LVCTS project and inform the development of the Value Proposition
- Key Sources of information
  - Statistics Canada, Canadian Defence, Aerospace and Commercial and Civil Marine Sectors Survey (2014) and Frost & Sullivan's Analysis o the Global Military Training and Simulation Market report (2015).
  - Regional Development Agencies (RDAs) and Other Government Departments' industry capability analysis

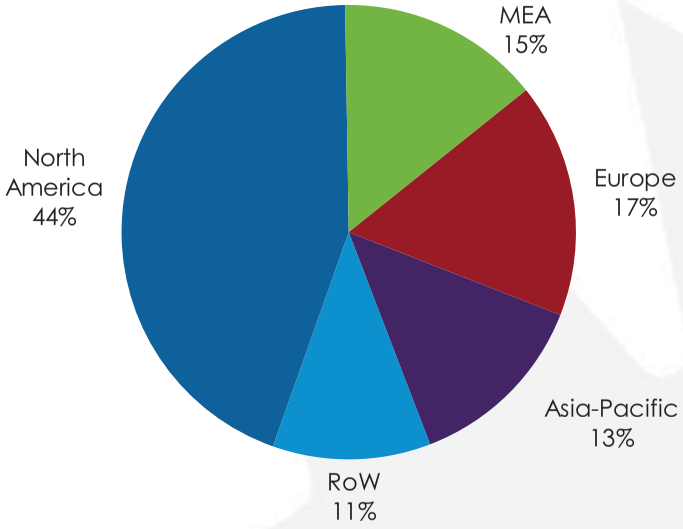
Global Simulation Market

- Total global military training and simulation market revenue forecast for 2016 is about $7.7 billion (USD).
  - Simulators currently represent the second largest revenue stream for training solutions with 27% revenue market share.
- North America is currently the largest revenue leader of the global military training and simulation market with forecasted revenue of about $3.4 billion (USD) in 2016

Global Revenue Forecast Training Solution, $B (USD), 2016



Global Military Training and Simulation Market Revenue Forecast by Region, 2016



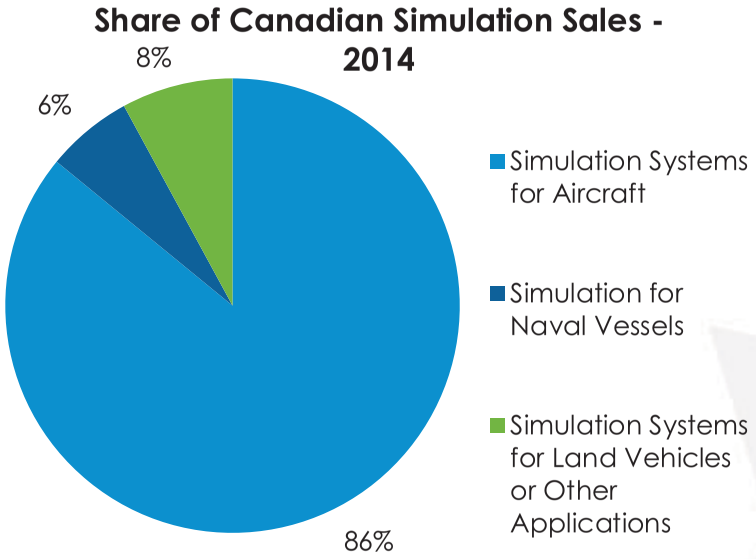
* ROW: Rest of the World

** MEA: Middle East and Africa

Canadian Land Simulation Market

- Canadian military land vehicle simulation systems related sales are close to $15 million.
  - Accounts for less than 1% of global market, and 8% of total Canadian defence simulation system sales

- The Top 4 Canadian military land vehicle simulation providers accounted for more than 60% of total sales, and the Top 8 accounted for close to 90%.



Market Research and Analysis

- The global military simulation market is estimated at US $7.7B for 2016.
- Land represents 28%, or $2.2 billion (USD) of the global military training and simulation market revenue in 2016
  - The land segment is forecasted to generate the largest growth in the global training and simulation market.
- North America is currently the largest revenue leader of the global military training and simulation market (44%)with forecasted revenue of about $3.4 billion (USD) in 2016
  - Between 2016-2024 this is expected to drop to 35%, with revenues in Europe almost doubling in the military training and simulation market.
- Canadian military land vehicle simulation systems related sales are close to $15 million, or 8% of total Canadian defence simulation system sales
  - Canada has less than 1% of the global military simulation market.

Strategic Considerations for VP

- Canada has a relatively small portion of revenue related to the global military simulation market, however the top 4 Canadian military land vehicle simulation providers accounted for more than 60% of total sales, and the Top 8 accounted for close to 90% of total sales in Canada.

- There is high Canadian content activity with more than 80% of sales dedicated to sourcing from Canadian suppliers.

- Data demonstrates Canadian simulation systems activity is R&D intensive. Third party analysis indicates strong potential for R&D opportunities related to the project and in other simulation activities in Canada.

- Canada is a global leader in air simulation in both commercial and defence applications

LVCTS - Proposed VP Evaluation Criteria

Defence Sector	• Commitment to perform Direct Work in Canada specific to the procurement
Canadian Supplier Development	• Commitment to undertake Work by SMB suppliers in Canada • Commitment to undertake Work by non-SMB suppliers in Canada
R&D	• Commitment to undertake R&D in Canada related to defence or commercial simulation applications
Exports	• Commitment to provide simulation training for international customers in Canada

VP Evaluation Questions
Defence Sector

Objective:

Motivate direct work in Canada to develop and enhance industrial capabilities related to this procurement.

1. How much direct work, as a percentage of bid price, related to this proposed procurement do you expect to undertake in Canada and in what areas?

2. To what extent will you be able to submit identified transactions for direct work at time of bid, as a percentage of bid price?

3. What high value activities related to this procurement can be undertaken in Canada?

VP Evaluation Questions
Supplier Development

Objective:

Expand and grow Canadian supply chains related to the simulation and training sector.

1. Generally, 15% Small and Medium Business (SMB) participation is a minimum mandatory requirement. Should Canada motivate SMB activities above this mandatory requirement? Please explain.

2. How do you intend to tap into existing Canadian capabilities related to simulation and training to perform this work and develop Canadian competencies?

3. If this criteria is broadened beyond simulation and training, what other supplier development opportunities would you propose and how do they fit into your corporate priorities?

VP Evaluation Questions
Research and Development (R&D)

Objective:

Incentivize investment in direct and indirect R&D activities in Canada in simulation and training technologies.

1. What current R&D activities are you undertaking in Canada in respect to simulation and training?

2. Is there potential to increase these activities in Canada, if so, in what areas?

3. To what extent, either as a percentage of bid price or in absolute dollar value terms will you be able to commit to R&D investments at the time of bid?

4. Recognizing there is significant R&D being performed in Canada with respect to simulation and training technologies already, should more points be awarded to commitments in R&D activities for either defence or commercial applications in the simulation and training sector?

VP Evaluation Questions
Exports

Objective:

Position Canadian companies to pursue export opportunities related to defence or commercial simulation and training.

1. To what extent as a percentage of bid price, will you be able to commit to export activities for Canadian-based operations?

2. What are the key factors to maximize simulation and training export opportunities from Canada? (i.e. intellectual property transfer, technology transfers, world product mandate, etc.)

VP Evaluation Questions - Other

1. Are there other high-value business activities not captured by the VP framework, which you believe would strengthen the Canadian economy? Please provide a detailed explanation of the activities and how they would support the creation of jobs and economic growth.

2. Industry consultation informs weighting considerations for Value Proposition evaluation scoring in relation to price and technical merit. Please provide your recommended weighting for this procurement with supporting rationale.

More Information

1. For more information on Industrial and Technological Benefits as well as the Value Proposition Guide, please visit: http://www.ic.gc.ca/itb

2. Written feedback to these questions to inform the development of a VP strategic objective for the LVCTS Project is requested by April 19, 2017.

3. Questions regarding clarification, as well as scheduling of one-on-one meetings following the release of the Letter of Interest must be sent to the Contracting Authority.


Canada