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The Industry Day will begin shortly

Joint Fires Modernization (JFM) Project

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Joint Fires Modernization (JFM) Project Industry Day

28 June 2023

Today's presentation will be given in English, but questions may be asked in either official language

Both the English and French versions of the presentation will be made available on www.canadabuys.gc.ca after this Industry Day

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La présentation d'aujourd'hui sera donnée en anglais, mais les questions peuvent être posées dans l'une ou l'autre des langues officielles

Les versions anglaise et française de la la présentation sera disponible le www.canadabuys.gc.ca après cette Journée de l'industrie

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Welcome and Overview of the Process

Darren Langdon
Contracting Authority

Administrative Points

ALL communication and contact during the Request for Information process MUST flow to and from the Contracting Authority ONLY.

No offline discussions regarding this requirement, other requirements or current processes can be had with any representative of Canada (PSPC, DND or ISED-C).

Administrative Points

- Keep cameras off
- Remain on MUTE
- Reserve questions until the end of each presentation

Overview

- Welcome (PSPC)
- Scope, Integrated Project Team, Requested Feedback
- Capabilities, Internal Interfaces, Quantities
- Standards Alignment, Coordinated Implementation, Innovation
- Sustainment Considerations
- Industrial and Technological Benefits (ITB) Policy

Presenters

- Darren Langdon – Public Services and Procurement Canada
- Christian Légère – Department of National Defence
- Captain Aaron Brideau – Canadian Army
- Rick Parent – Department of National Defence
- Major Quinton Mimura – Department of National Defence
- Eric MacFarlane – Innovation, Science and Economic Development Canada

Industry Day

A forum where Industry representatives will be presented an overview of the requirement and for Canada to address any questions.

Ensures that the government exercises due diligence and maintains the integrity of the procurement process.

Industry Day

- This is not a solicitation and an Request For Proposal (RFP) may not be established directly as a result of this Request For Information (RFI).
- The intent of the RFI process is to seek information from Industry, to assist the JFM Project:
  - Provide industry with a project update related to the Joint Fires Modernization (JFM) project;
  - Determine the capability of industry to satisfy the requirements;
  - Obtain feedback on any issues that would impact any resulting solicitation and/or department's requirements;
  - Inform and engage industry on the Industrial and Technological Benefits (ITBs) Policy, including Value Proposition (VP)

Questions

- There will be a General Question and Answer period at the conclusion of this presentation
- ALL Questions and Answers will be documented and posted on www.canadabuys.gc.ca as an amendment to the Request for Information
- No Company confidential, industry sensitive or proprietary information will be shared

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Project Management

Scope, Integrated Project Team, Requested Feedback from Industry

Christian Légère

Project Manager

Director Armament Sustainment Program Management (DASPM) 6

Director General Land Equipment Program Management (DGLEPM)

Project Manager's Preface

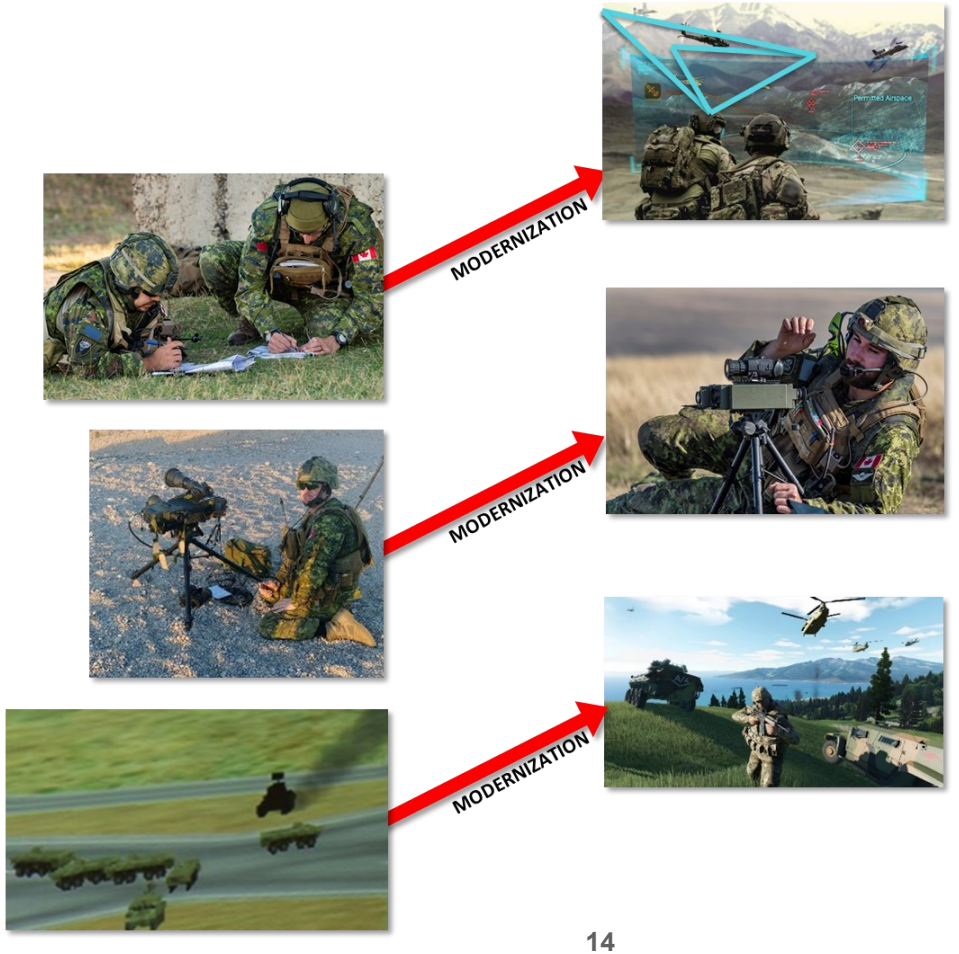
- Intend to share as much as possible the scope & capability sought
- DND aware of IP issues
- Project will require a prime integrator
- Still assessing optimal procurement strategy

Joint Fires Modernization (JFM)

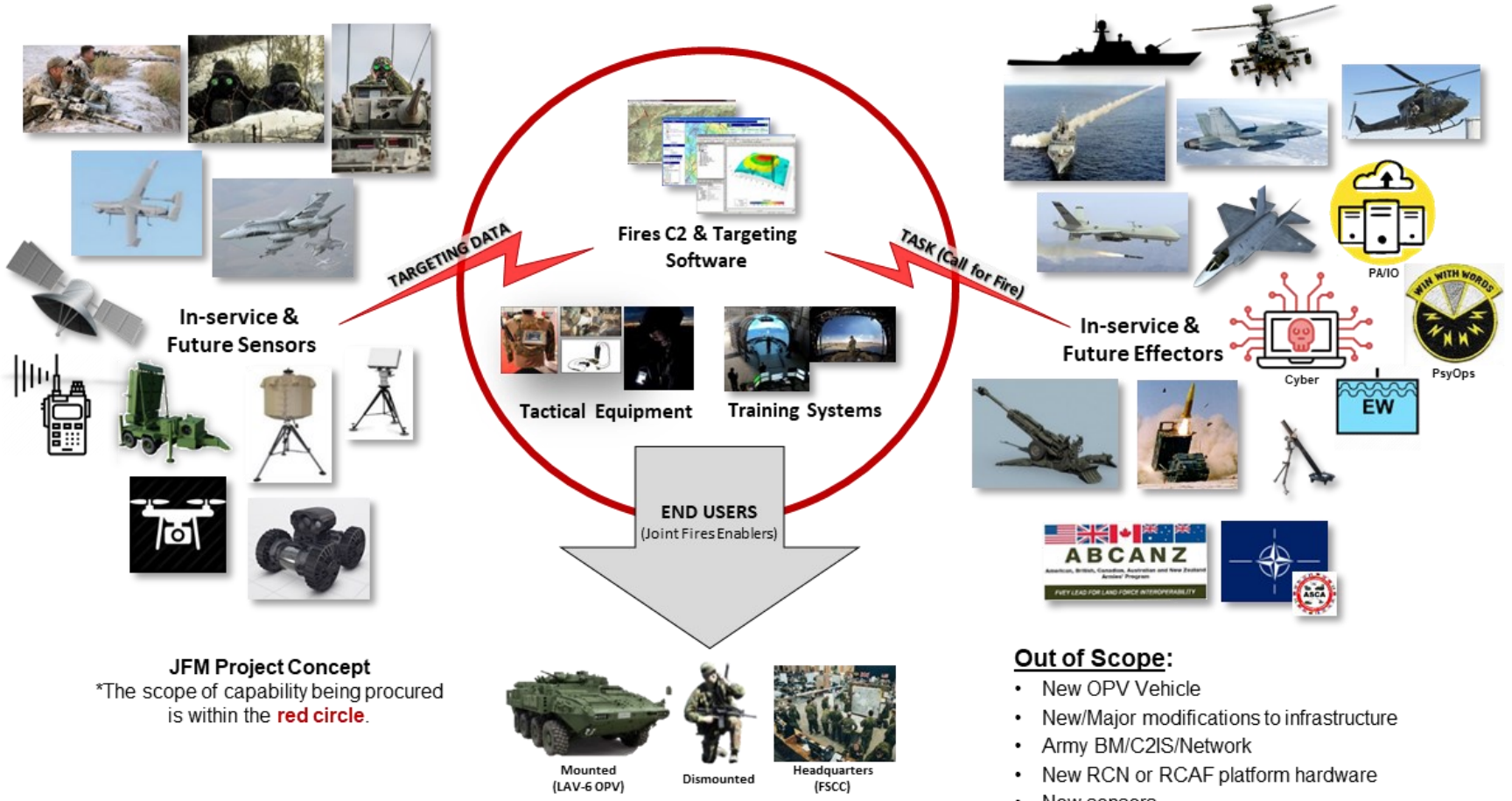
Business Need

The CA requires a **modernized joint fires capability**, to include **software, hardware, and training systems**, that **facilitates the sensor-to-effector link*** and **maximizes interoperability**** with CAF joint elements and coalition partners.

* (C)JADC2 alignment with US DoD & partner nations
** Key enabling project for CAF digitalization



JFM Project Scope



JFM Project Concept
*The scope of capability being procured is within the **red circle**.

Out of Scope:

- New OPV Vehicle
- New/Major modifications to infrastructure
- Army BM/C2IS/Network
- New RCN or RCAF platform hardware
- New sensors
- New effectors
- New PYs

Support Requested from Industry

- Your expertise in Joint Fires!
- Feedback on requirements questions within RFI package
- What solutions you will have vs what you currently have

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Operational Authority

Capabilities, Internal Interfaces, Quantities

Captain Aaron Brideau

Deputy Project Director

Director Land Requirements (DLR)

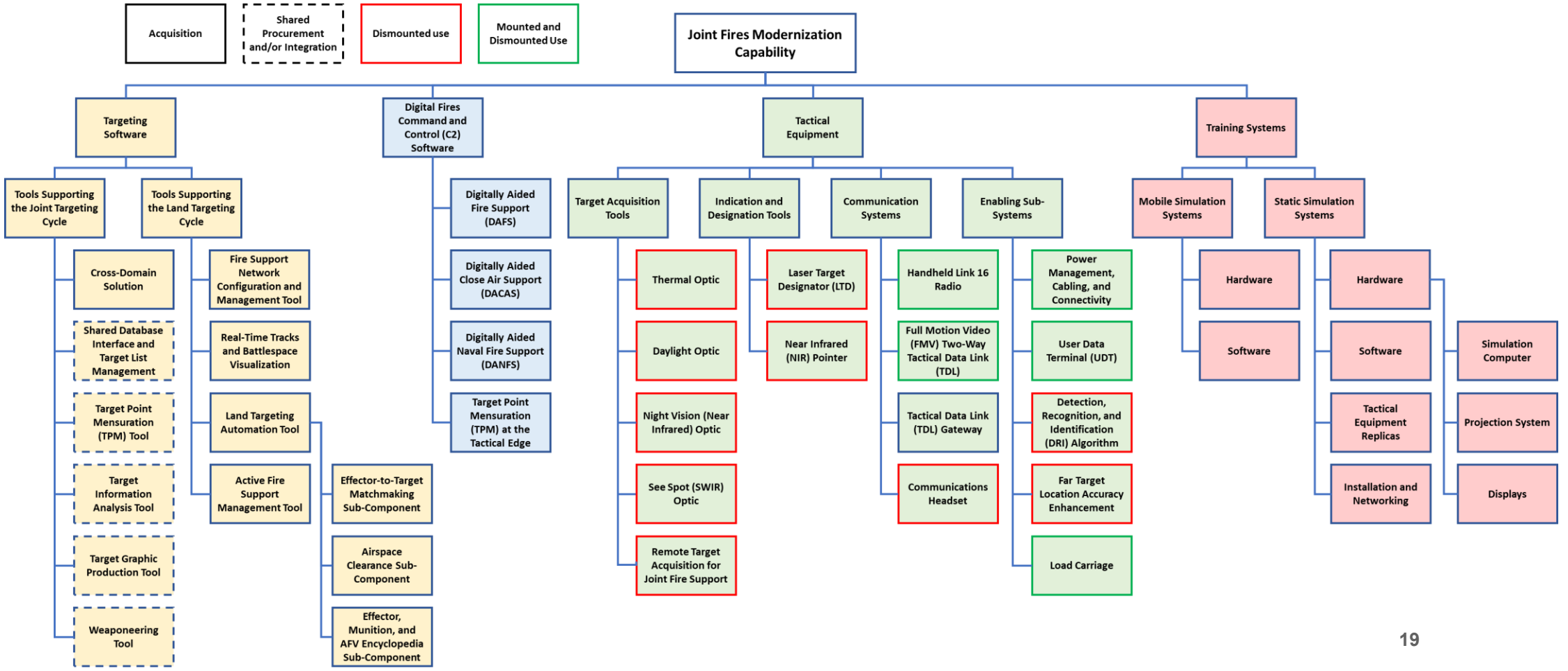
Canadian Army Headquarters (CA HQ)

Outline

- Project Scope Refinement
  - Discrete capabilities required within larger context
  - External contributions
- Internal Interfaces
  - Interaction of deliverables with one another
  - Context within the larger *C4ISR Ecosystem*
- System and/or Capability Quantities

Project Scope

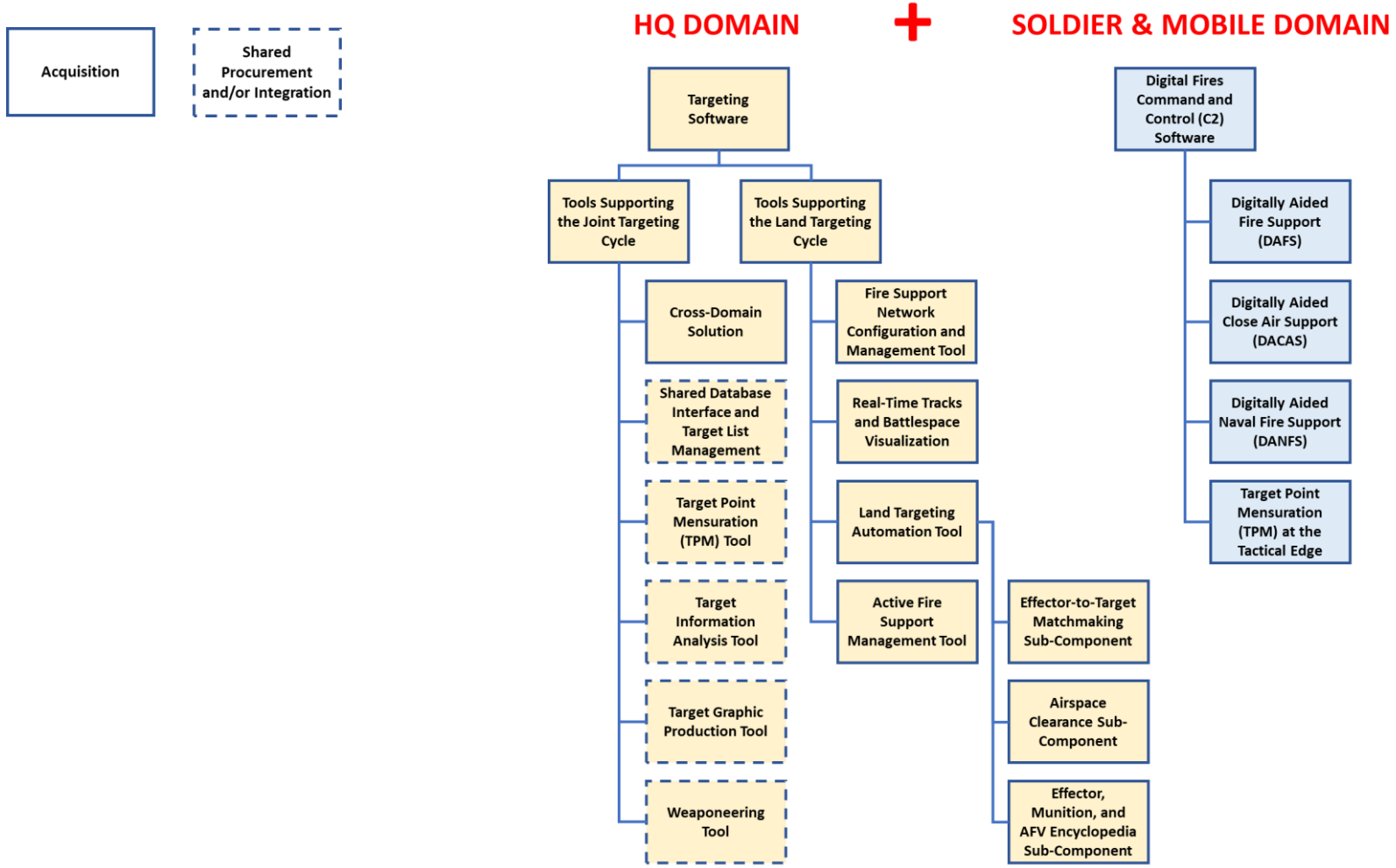
Overview



Public Services and Procurement Canada
Services publics et Approvisionnement Canada
Canada

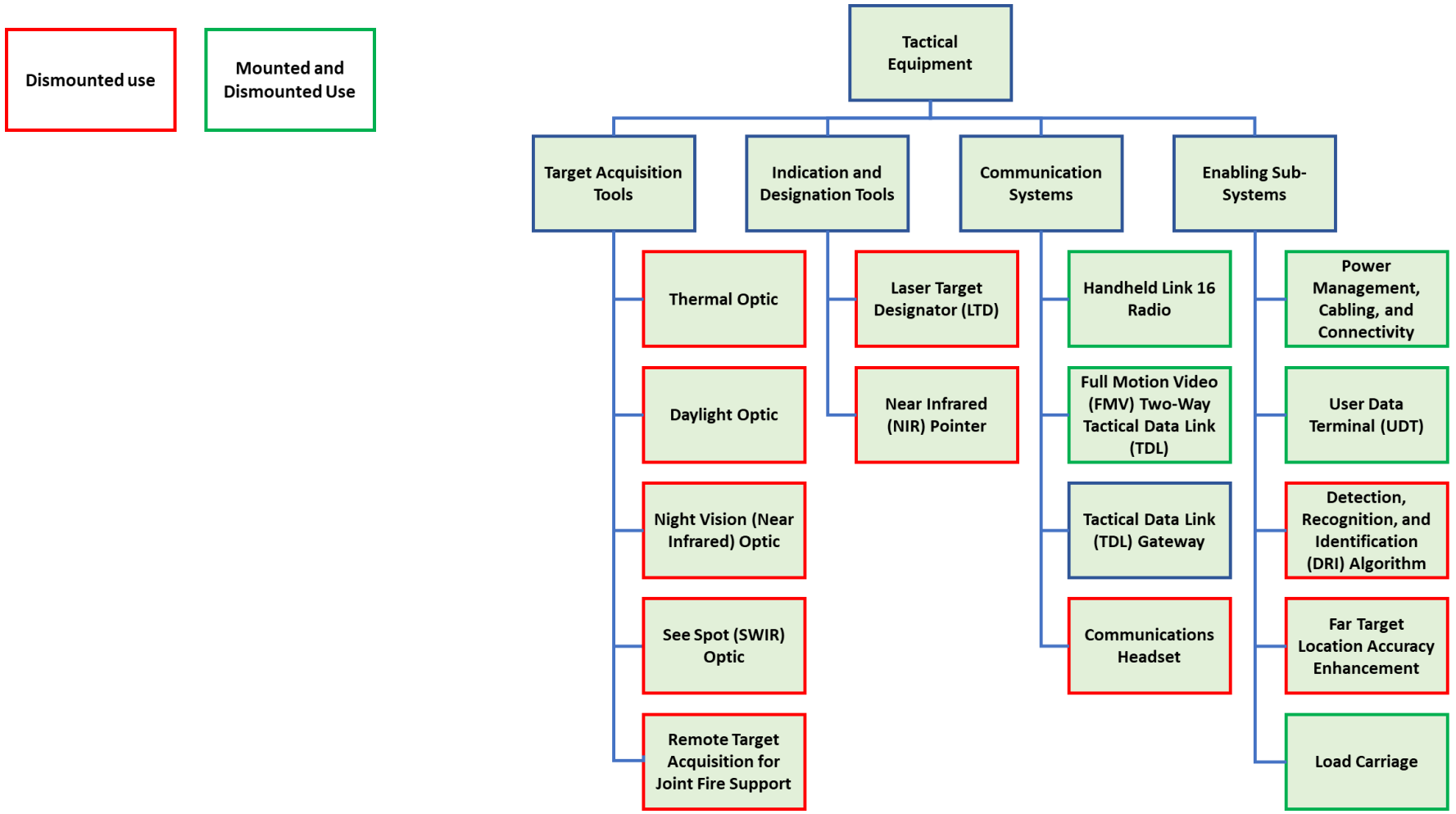
Project Scope

Targeting and Joint Fires Command and Control



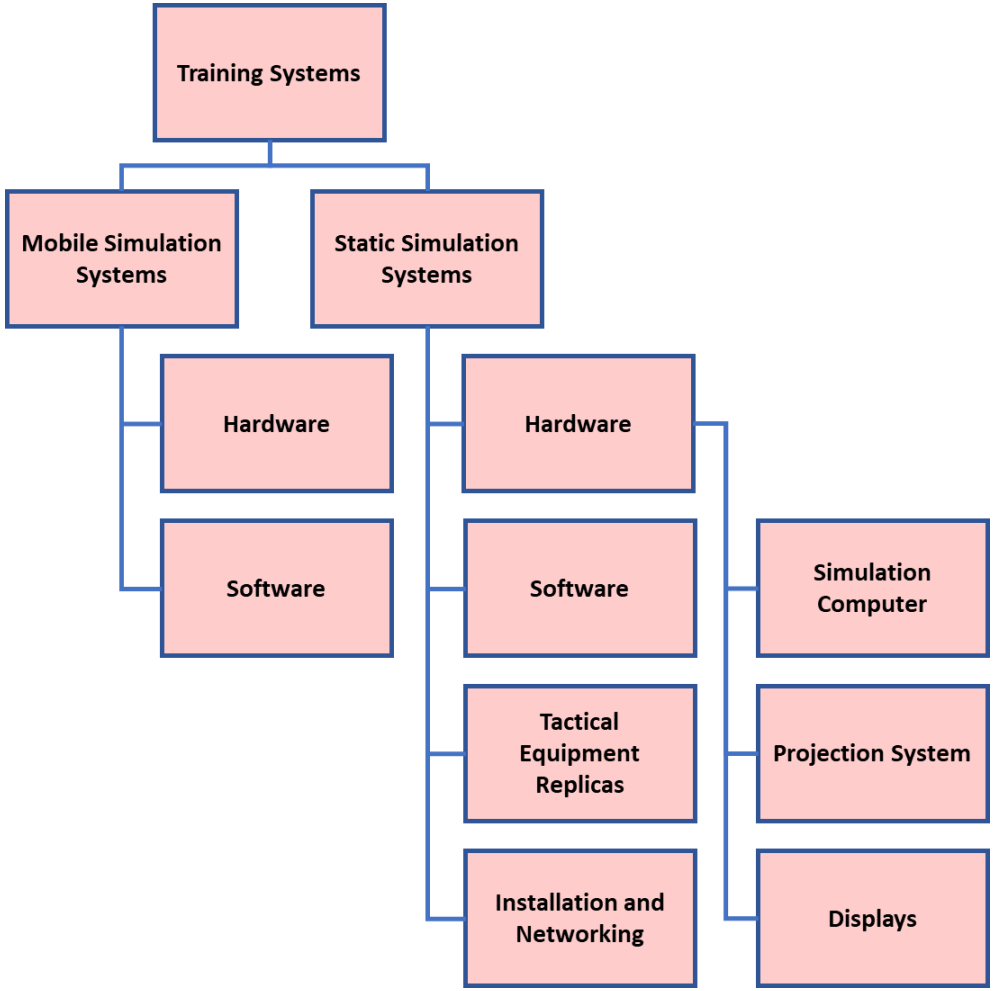
Project Scope

Tactical Equipment



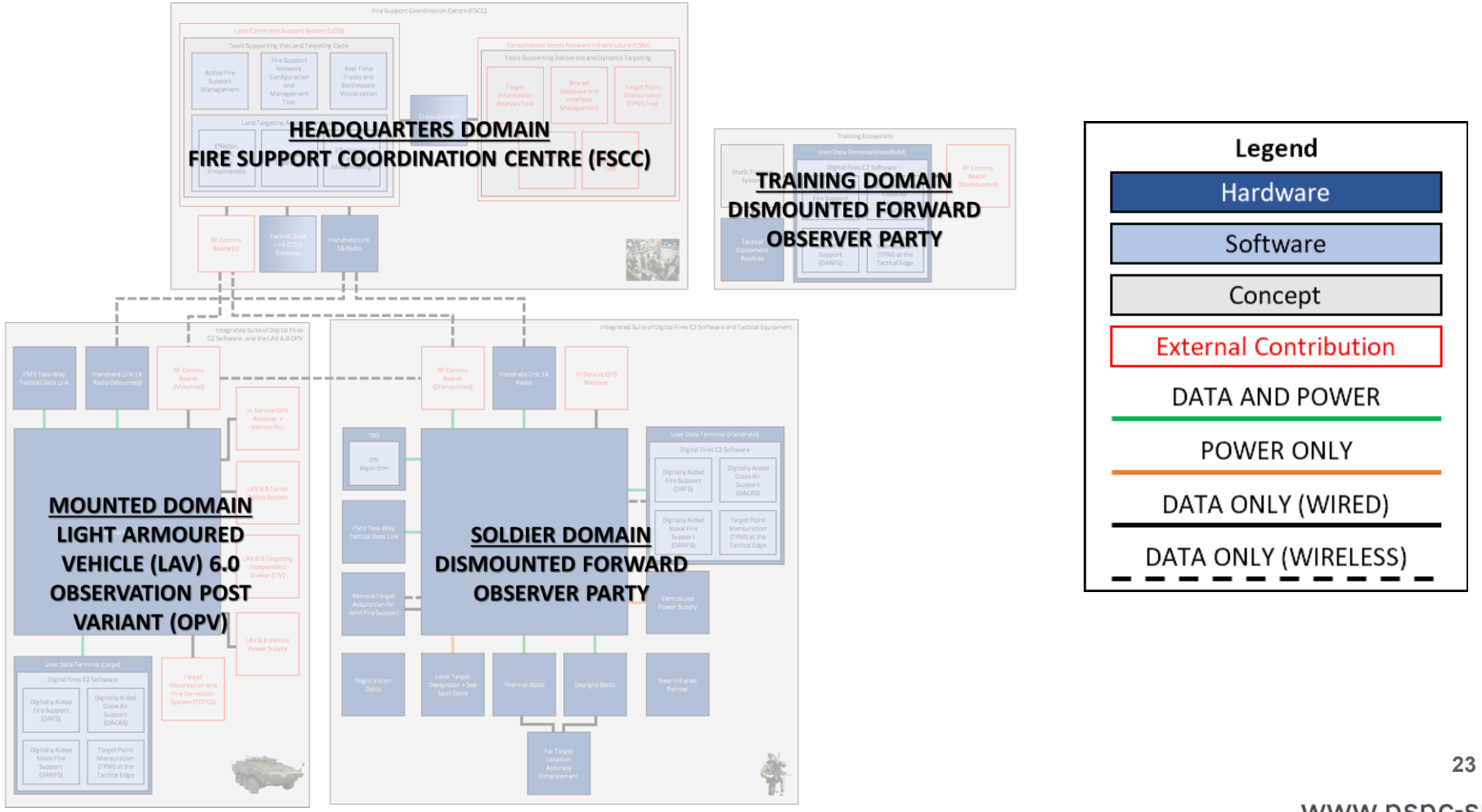
Project Scope

Training (Simulation) Systems



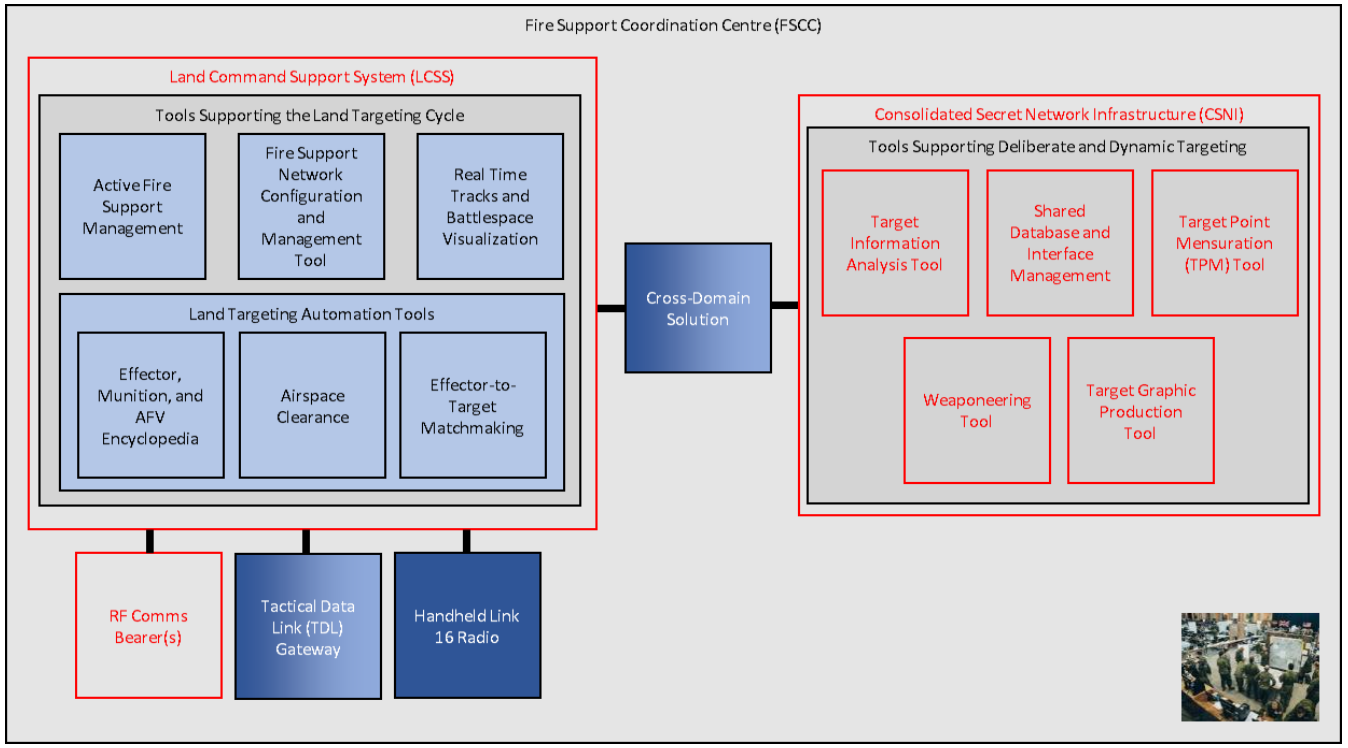
Internal Interfaces

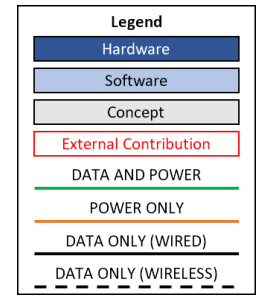
Overview



Internal Interfaces

Headquarters Domain



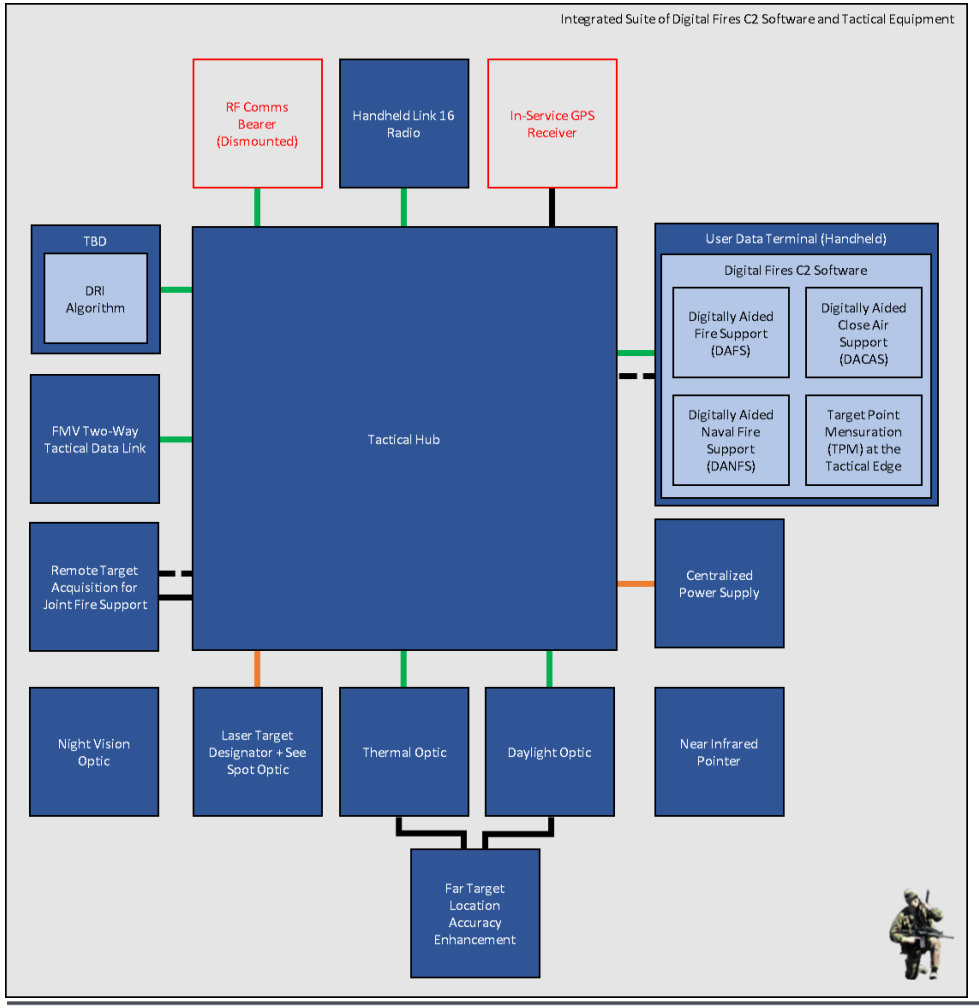


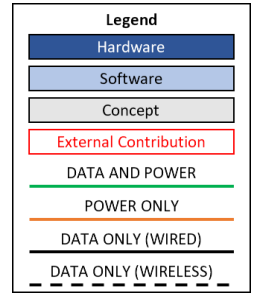
Generic Capabilities:

1. User-friendly digital fire support network establishment, configuration, and monitoring
2. Cross Domain Solution for Brigade Level fire support capabilities to act as Force Execution element of higher HQ Joint Targeting Cycle
3. Three-dimensional battlespace visualization
4. Initiation, management, and execution of fire support tasks from the Brigade and Battle Group Fire Support Coordination Centres (FSCCs)
5. Automated effector to target assignment
6. Automated clearance of airspace in cooperation with Airspace Coordination Centre (ASCC)

Internal Interfaces

Soldier Domain



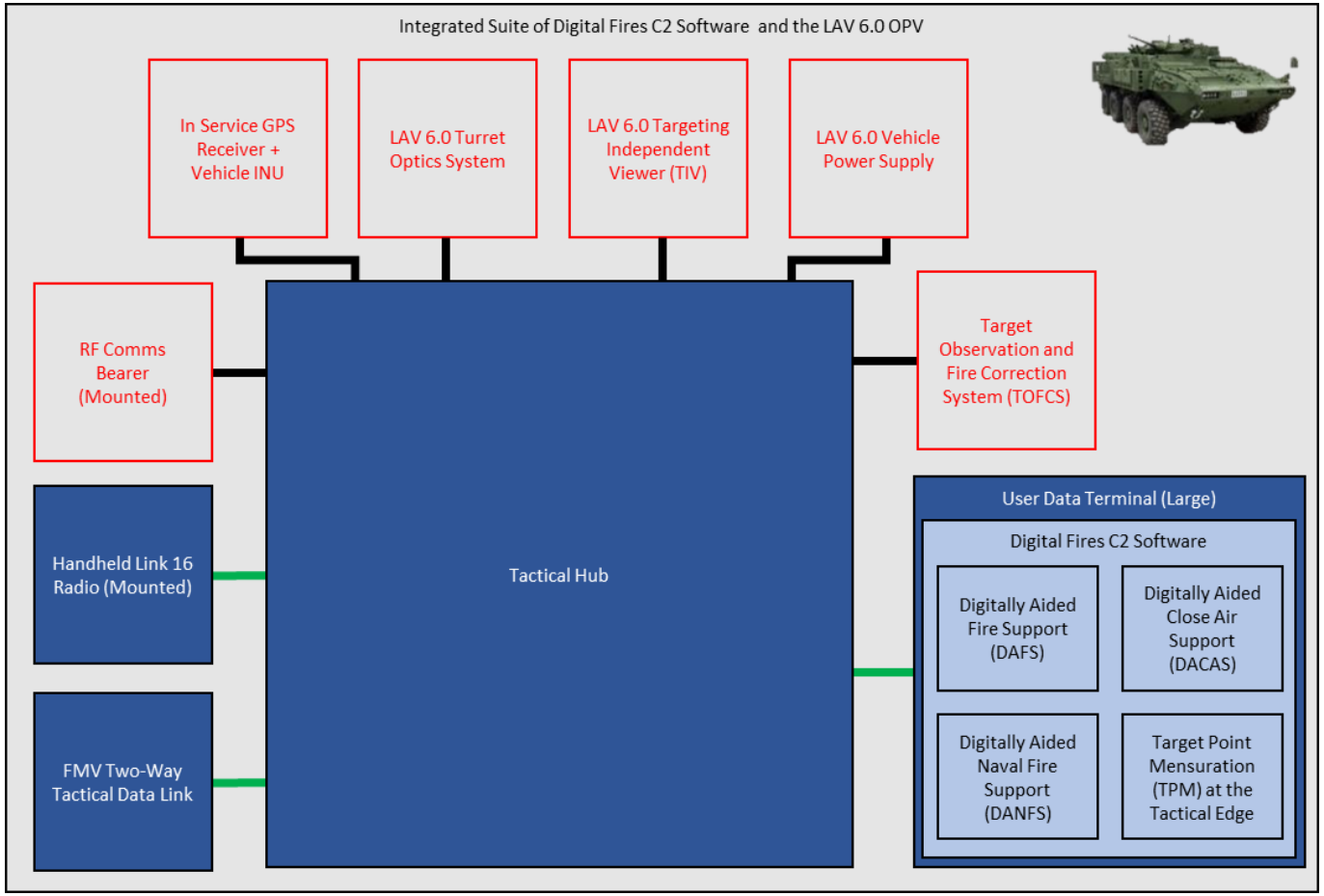


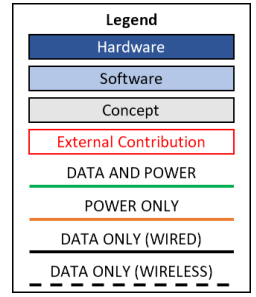
Generic Capabilities:

1. Integrated optics, power, communications, and command and control
2. Remote observation from position of cover (remote sensor operation, small form factor Unmanned Aerial Systems, etc.)
3. Multiple methods to generate highly accurate target coordinates
4. Common situational awareness for all members of the FOO Party (Forward Observation Officer, Joint Terminal Attack Controller, Observation Post Detachment Commander, Detachment Member)
5. Ability to retain the capability of the party when split in half to occupy different OPs and optimize for Size, Weight and Power considerations
6. Unique communications requirements (Link 16, Two Way Tactical Data Link)

Internal Interfaces

Mounted Domain



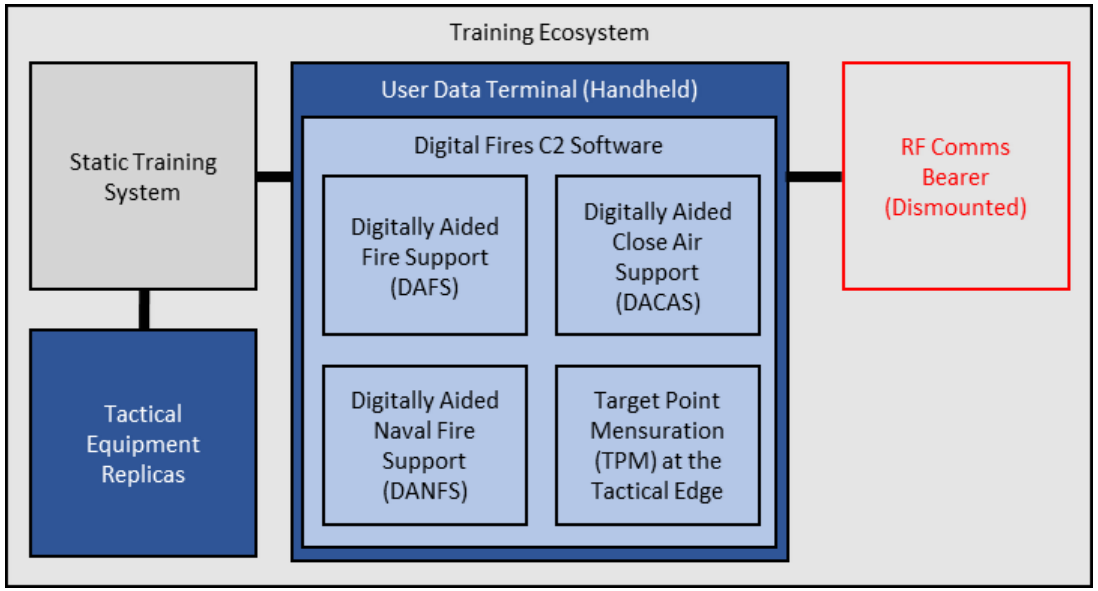


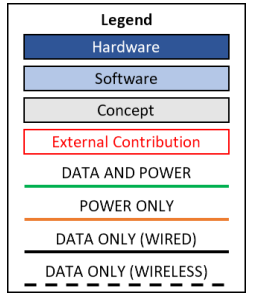
Generic Capabilities:

1. Mirror capability of dismounted users, including identical digital fire support command and control User Interface
2. Leverage vehicle communications and target acquisition systems (turret and targeting independent viewer optics)
3. Integration with fire correction applications (Target Observation and Fire Correction System - TOFCS)

Internal Interfaces

Training Domain



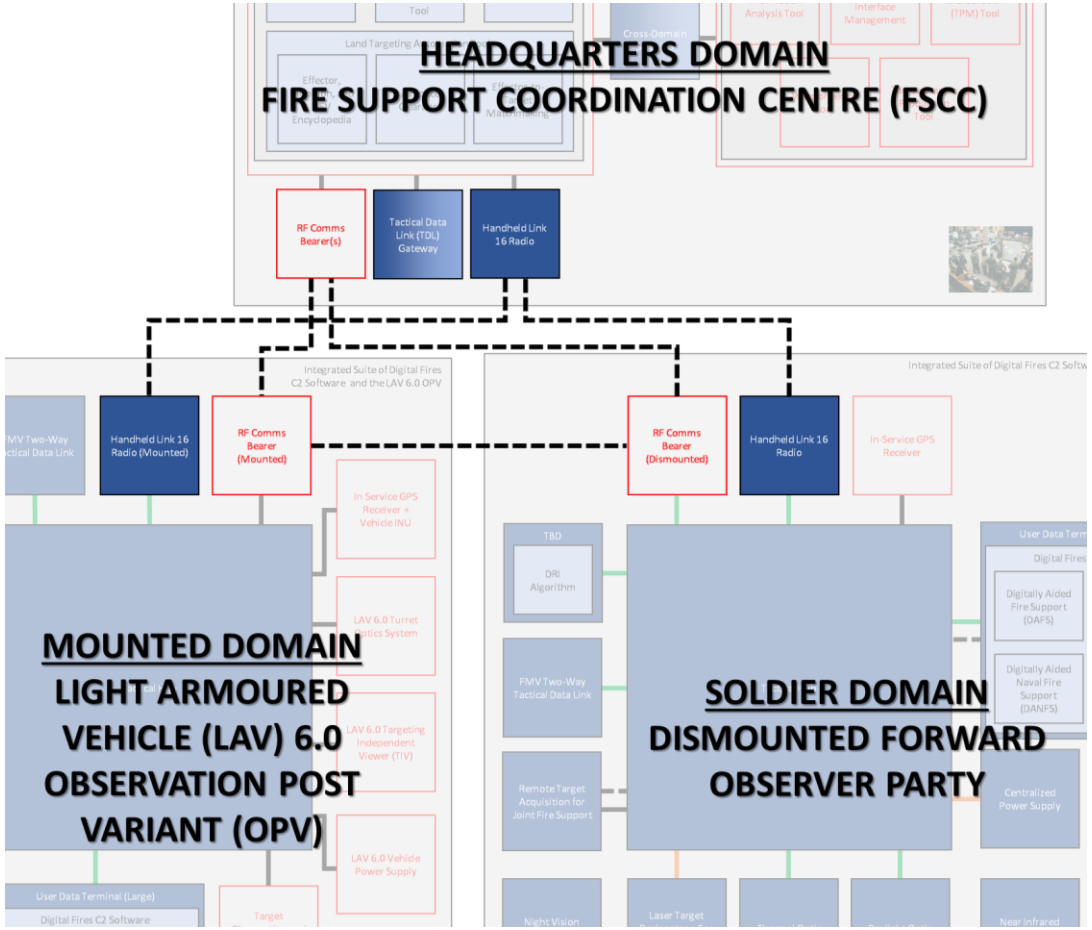


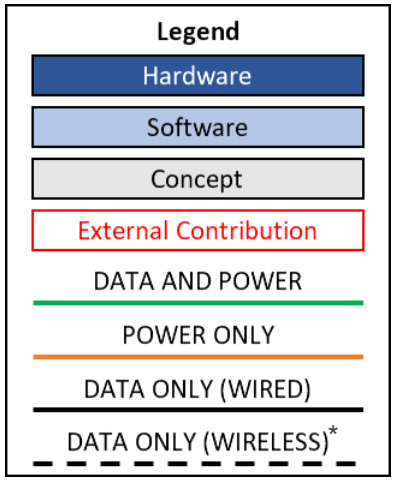
Generic Capabilities:

1. Same Digitally Aided Joint Fire Support applications used in live training available in the Virtual Environment
2. Tactical Equipment replicas to interact with the Virtual Environment
3. Communications to enable unit-wide command-post exercises (Virtual Simulation for Observer blended with Live simulation for gun batteries and HQ elements.
4. Sim-to-sim interaction within common virtual environment

Internal Interfaces

Intra-Connectivity

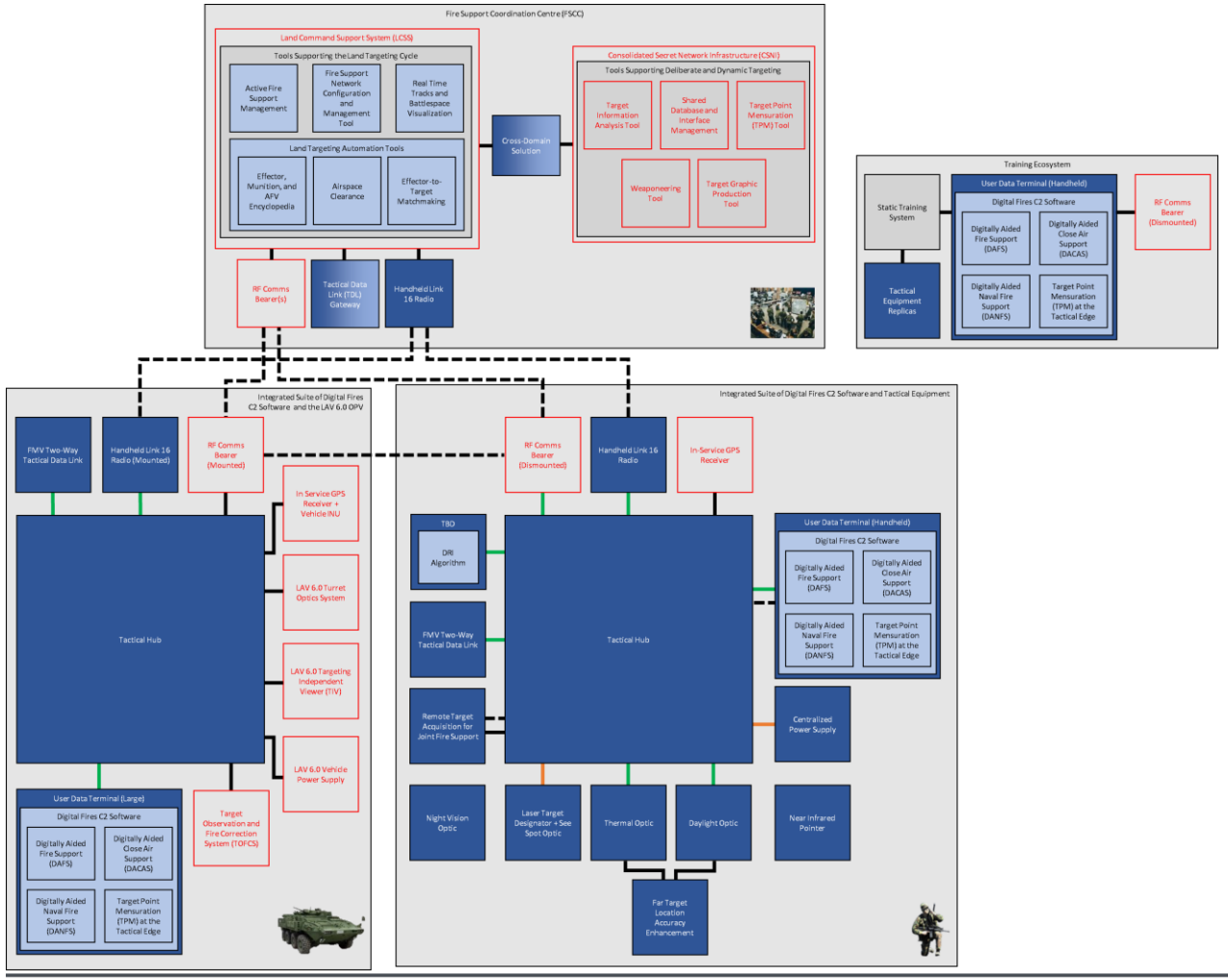




*Incudes communications by voice where digital comms is unavailable or not suitable

Internal Interfaces

End State



Legend

- Hardware
- Software
- Concept
- External Contribution
- DATA AND POWER
- POWER ONLY
- DATA ONLY (WIRED)
- DATA ONLY (WIRELESS)

Generic Capabilities:

1. Line of Sight (LOS) and Beyond Line of Sight (BLOS) communications between tactical edge and HQ, robust PACE plan
2. Interoperability (read: interchangeability) wherever possible, gateways to fill gaps with ability to deploy at echelon
3. Flat and transparent network to facilitate rapid decision making and broad situational awareness
4. Training systems that leverage actual hardware and software wherever possible
5. Seamless transition between the mounted and dismounted roles

System Quantities

Targeting and Joint Fires Command and Control

- Options under consideration include:
  - Enterprise licencing for Joint Fires Command and Control software employed at echelon and at the Royal Canadian Artillery School (RCAS) for training purposes
  - Incorporation of accredited Targeting Applications [*Digital Precision Strike Suite (DPSS), Joint Automated Deep Operation Coordination System (JADOCS)*]
  - Use of *Tactical Assault Kit (TAK)* and/or *Android Precision Assault Strike Suite (APASS)*

System Quantities

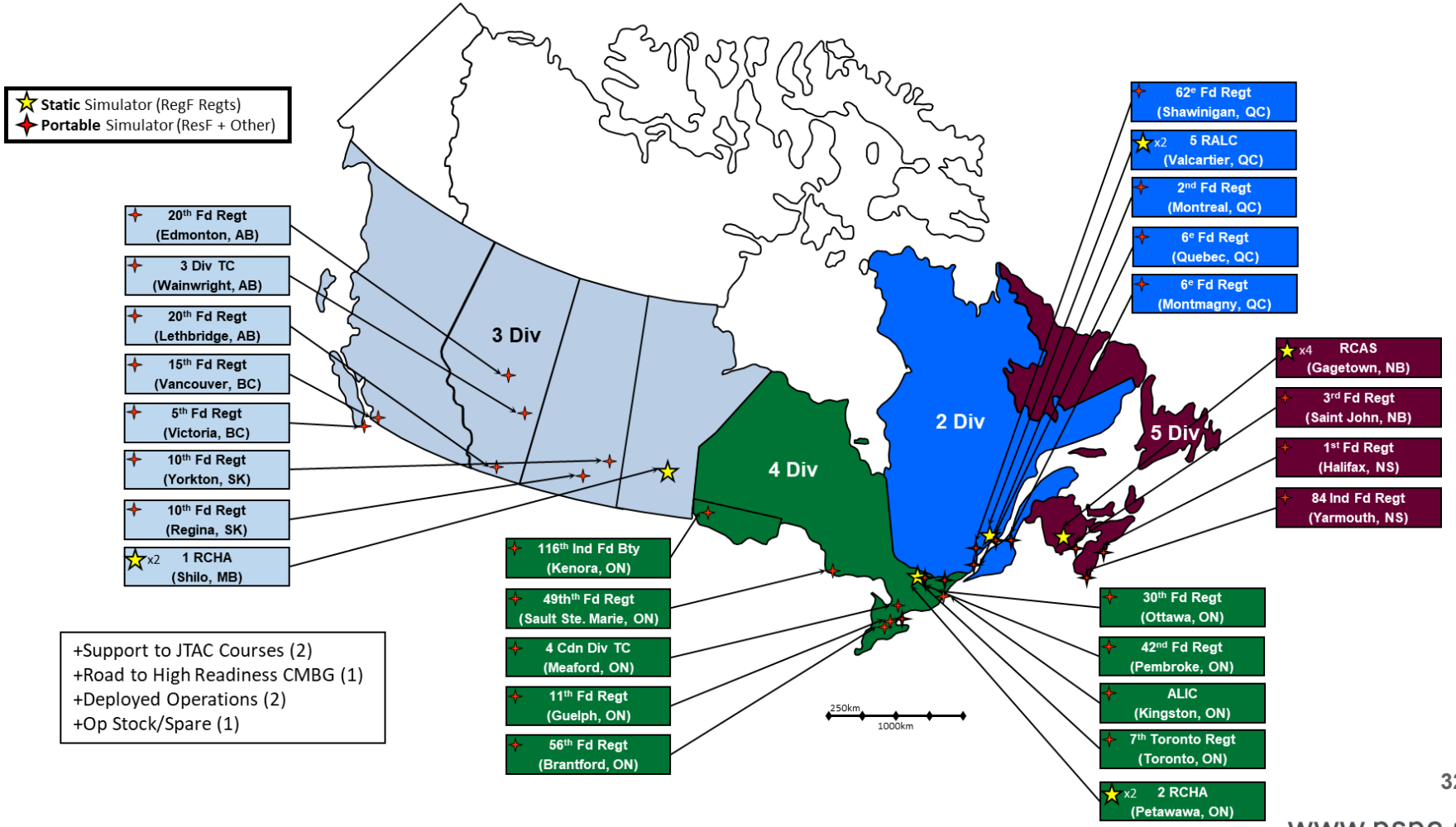
Tactical Equipment

- In the interest of focusing on capability as opposed to quantities of equipment, JFM would prefer not to dictate specific quantities of scope "boxes". This leaves latitude to arrange and/or combine boxes into single devices, find efficiencies, and improve the diversity of solutions presented.

- Critical to this approach is **the capability sought at the party level**, while also optimizing for size, weight, and power of the configuration, particularly for dismounted tactical equipment.

Anticipated Training Locations

Training (Simulation) Systems



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Technical Considerations

Standards alignment, Coordinated Implementation, Innovation

Rick Parent

Systems Engineering Manager

Director Armament Sustainment Program Management (DASPM) 6

Director General Land Equipment Program Management (DGLEPM)

(Primer) Digital Fires Interoperability

"Standards adherence is the path to interoperability"

Key Takeaway: ***Different Alliances, Different Standards - Same Ambition***

To achieve interoperability, the Canadian Army needs to adopt both standards in its future Joint Fires solution.

=

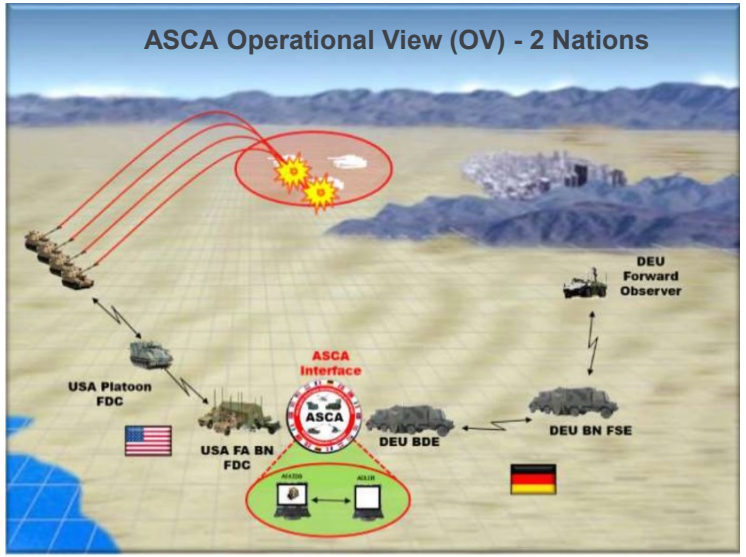
ASCA

ABCANZ

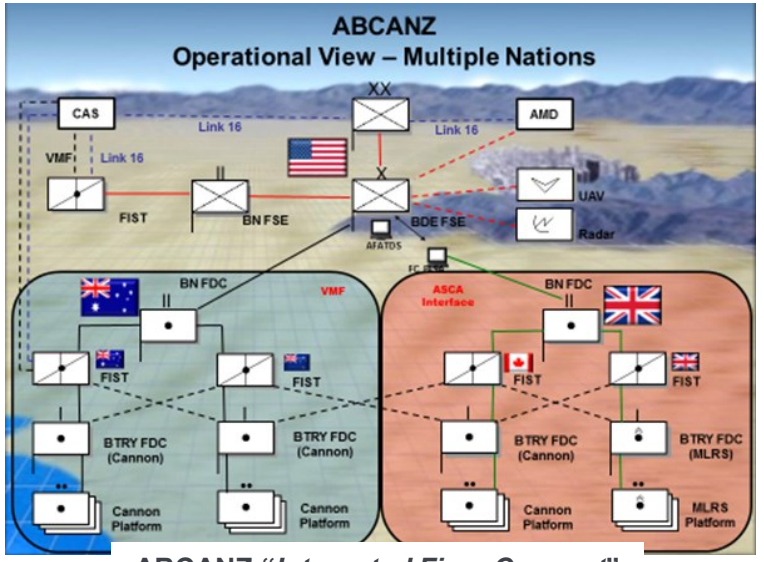
American, British, Canadian, Australian and New Zealand Armies' Program

FVEY LEAD FOR LAND FORCE INTEROPERABILITY

(+)



NATO ASCA-enabled Coalition "*Interoperable Fires Concept*"



ABCANZ "*Integrated Fires Concept*"

Digital Fires Interoperability

Joint Fires-applicable Standards

- MIL-STD-6017 - *Variable Message Format (VMF)* (K-series)
- MIL-STD 188-220 - *Message Transfer Device*
- MIL-STD-2045-47001 - *Data Transfer Application Layer*
- MIL-STD-6016 - *Link 16* (J-Series)
- MIL-STD-3011 - *JREAP*
- MIL-STD-6090 - *Cursor-on-Target (CoT)*
- MIL-STD-6040 - *US Message Text Format (MTF)*
- MIL-STD-6020 - *Data Forwarding Between Tactical Data Links*
- AArtyP-03 - *Artillery Procedures for Automatic Data Processing (ADP) System Interoperability / Artillery Systems Cooperation Activities (ASCA)*
- US Joint Staff J6 Joint Fires Integration Division (JFID) - *DAFS & DACAS Engineering Change Proposals (ECP)*
- ABCANZ Armies Program *Technical Standard 2124 - Digital Fire Support System*
- US Army Futures Command, Line of Effort #3: *JADC2 Messaging*

Artillery Systems Cooperation Activities (ASCA)

Canadian Status

Member Elect
(v7.02)

Thirteen Nations / Twelve Systems

Sponsored Nations

- DEU Sponsors LTU (ADLER)
- NOR sponsors FIN (AHJO)
- DNK sponsors SWE (THOR)
- USA sponsors ROU (I-FATDS-R)
- GBR sponsors LVA (I-FATDS-L)
- DEU sponsors HUN (IC2)
- USA sponsors POL (IFATDS-P & TOPAZ)
- DEU Sponsor CRO (IC2)

Observer Nations

SVN CZE SVK AUT

Interested Nations

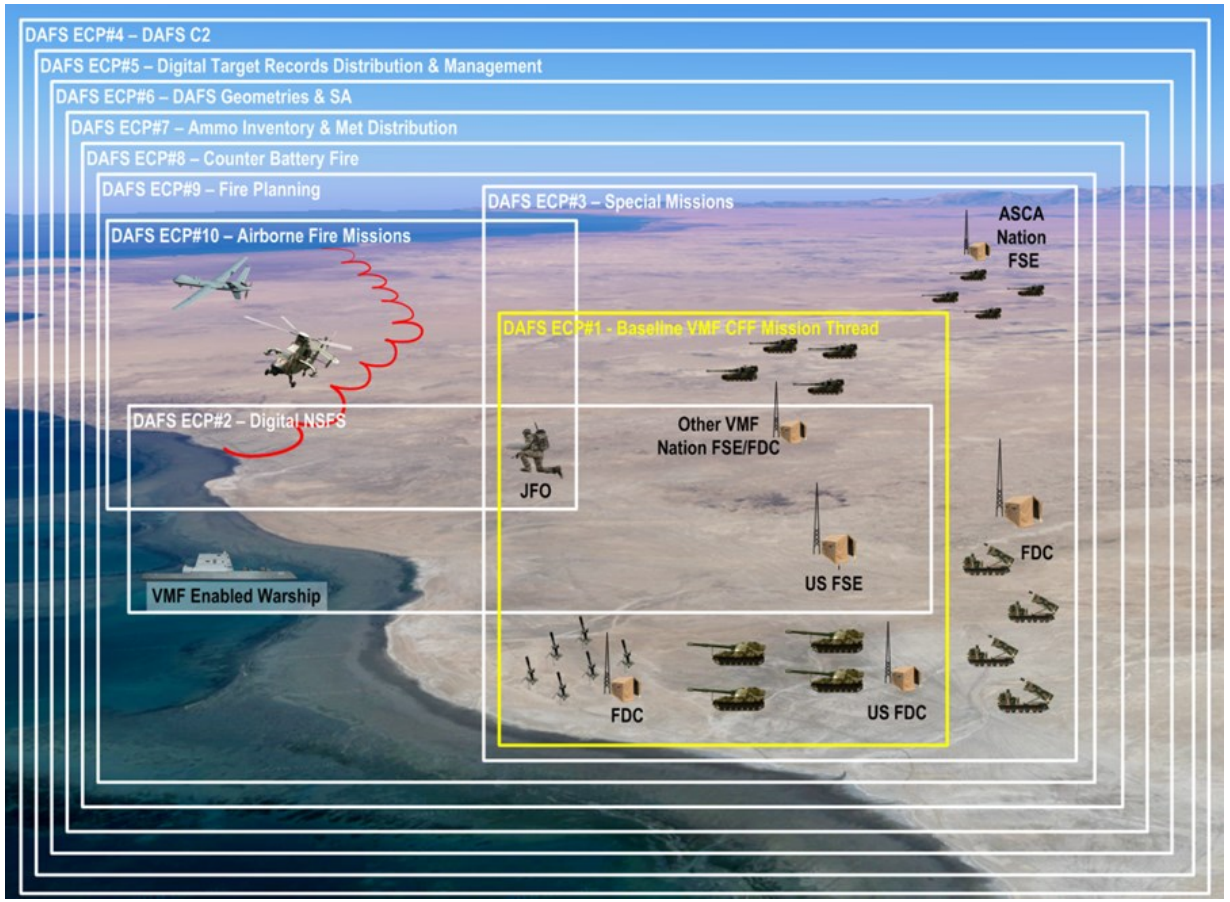
PRT UKR ARE (UAE) GRC GEO BRA

Digitally-Aided Fire Support (DAFS)

US Joint Staff-led Coordinated Implementation - Engineering Change Proposals (ECP) [1/2]

= *Lead*

US Joint Staff J6
Joint Fires Integration Division (JFID)



OV-1 Showing ECP#1 Context in the DAFS ECP Suite

"Baseline specification for VMF execution in the digital fire support system of systems (SoS) - including implementation of supported stack(s)."

MIL-STD-6017 VMF Message Body	MIL-STD-2045-47001 Application Header	MIL-STD-188-220 Lower Layer Protocols

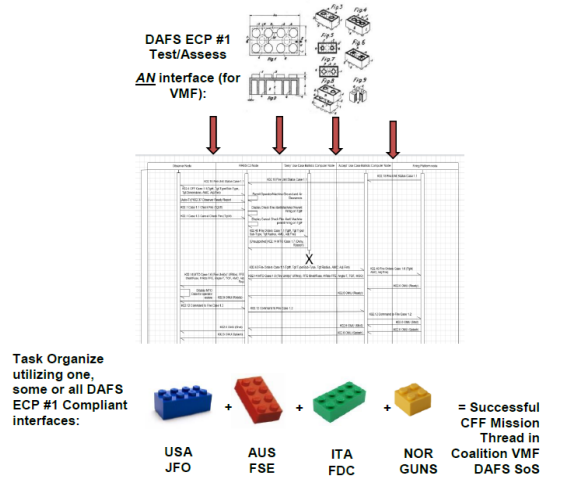


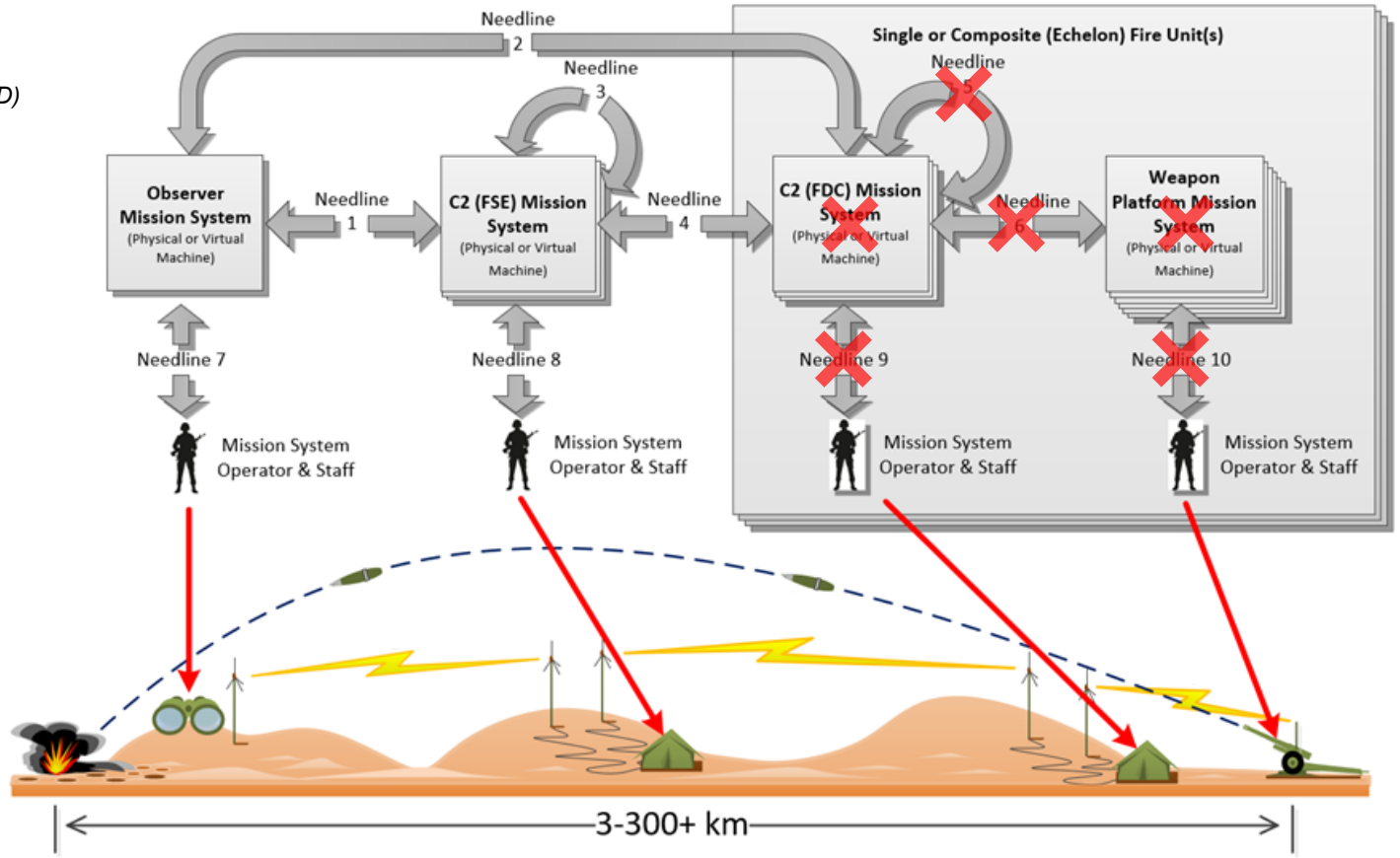
Figure 3 DAFS ECP#1 Plug-and-Play Paradigm

Digitally-Aided Fire Support (DAFS)

US Joint Staff-led Coordinated Implementation [2/2]

= *Lead*

US Joint Staff J6
Joint Fires Integration Division (JFID)



= Not in JFM project scope

OV-2 Digitally Aided Fire Support (DAFS) Call For Fire (CFF) Warfighter Service

Digitally-Aided Close Air Support (DACAS)

US Joint Staff-led Coordinated Implementation

= *Lead*

US Joint Staff J6
Joint Fires Integration Division (JFID)

- ECP 1 Baseline DACAS Messaging
- ECP 2 Designated Ground Tgt / SPI
- ~~ECP 3 Marked Still Imagery~~
- ECP 4 Exchange of Network Parameters
- ECP 5 Common Operational Tasking
- ECP 6 Joint Tactical Air Request
- ~~ECP 7 FAC(A) Functionality~~
- ~~ECP 8 UAS Integration~~
- ECP 9 Common Control of NEW
- ECP 10 Multiple Tgts in a Single 9-Line
- ECP 11 BLOS Situation Update
- ECP 12 Digital Reference Point
- ECP 13 JFO/JTAC Integration
- ECP 14 Link 16/J-Message Baseline
- ECP 15 Shared CAS Mission Data

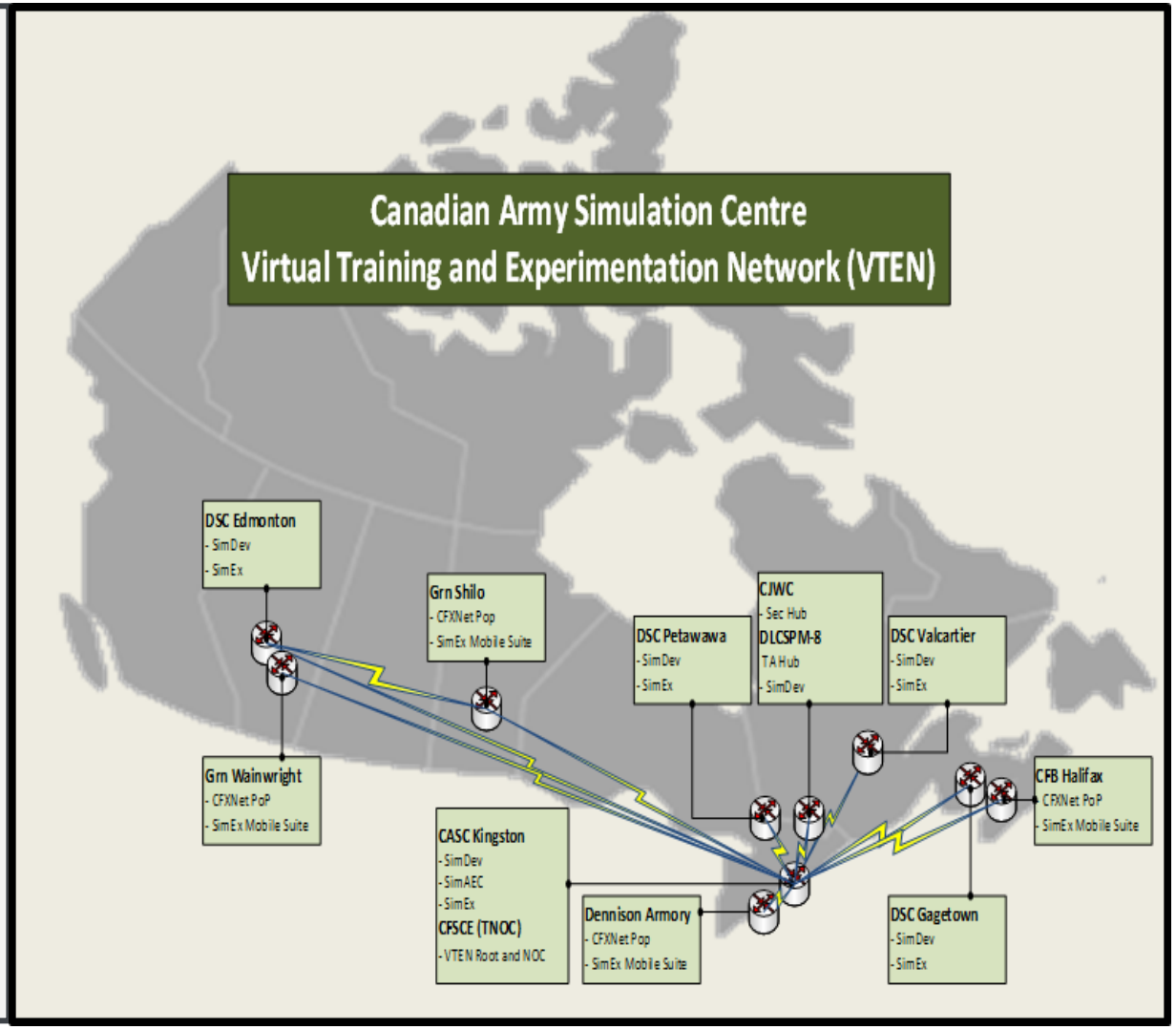
ECP #3 = NO (archived by community)
ECP #7 = NO (outside of JFM project scope)
ECP #8 = NO (outside of JFM project scope)

Distributed Mission Training (DMT)

Update on the CA's Training Network: *Virtual Training and Experimentation Network (VTEN)*

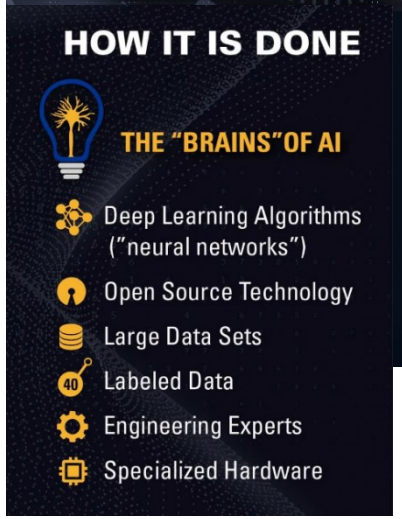
What VTEN will do for the Army?

- Permanent, closed training network **(across all sites)**
  - Provides central network management for local and distributed LIVSIM, VIRSIM, and CONSIM
  - Replaces legacy unaccredited networks in use (SDNet/SimNet and outdated LCSS(U) 2.7.1.6 networks)
- Network backbone for the ***Future Integrated Training Environment (FITE)*** vision of the Army which will include all digitized command support training and L/V/C Sim support
- Enable *Intra* (CAF) and *Inter*-operability to connect to Allied/Multi Eyes networks:
  - US - Joint Training Enterprise Network (JTEN 4EE)
  - US & 56 Nations - Combined Federated Battle Laboratories Network (CFBL)



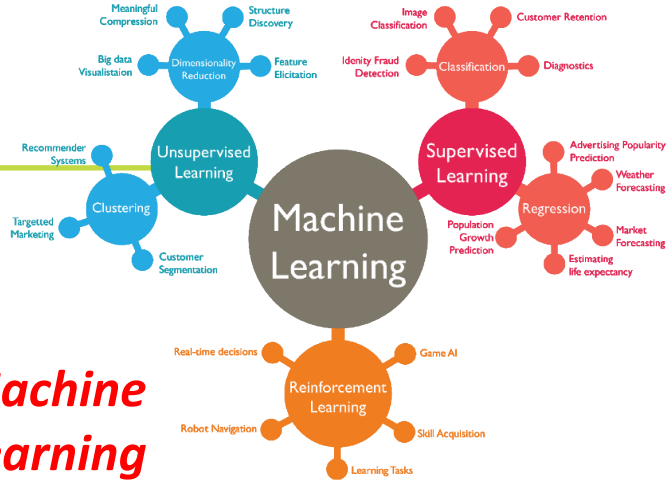
Innovation & Emerging Technologies

Future-proofing the JFM capability

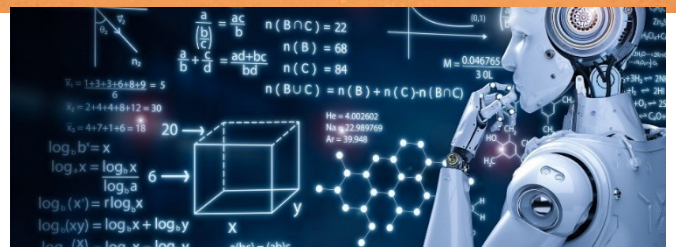


Artificial Intelligence

Automation



Machine Learning



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Sustainment Considerations

Major Quinton Mimura

Integrated Logistics Support Manager

Director Armament Sustainment Program Management (DASPM) 6

Director General Land Equipment Program Management (DGLEPM)

Sustainment

- Throughout definition phase, project team to conduct a detailed sustainment business case analysis to refine the sustainment strategy.
- Based on evolving technology project is assessing technological refreshes throughout the life cycle.
- Requesting continued industry engagement to propose and discuss in-service support solutions.

Sustainment

Key Considerations

- Assessing Field Service Representatives to provide support. Remote and in-person support considerations to meet the needs of where CAF will be employed.

- Assessing in-service support to ensure latest software/ firmware is updated through the life of the capability.

- Assessing in-service support for activities such as training, maintenance and any other activities beyond CAF integral/institutional capabilities.

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Au service du GOUVERNEMENT, au service des CANADIENS.

Industrial and Technological Benefits Policy

Eric MacFarlane
Project Manager
Innovation, Science and Economic Development Canada (ISED-C)

Thamar Spitzer
Project Officer
Innovation, Science and Economic Development Canada

Joint Fires Modernization (JFM)

Industrial and Technological Benefits/ Value Proposition

June 28th, 2023

Outline

- Objective
- Defence Procurement Strategy
- Industrial and Technological Benefits including Value Proposition
- Key Industrial Capabilities (KICs)
- Industry Consultation
- Preparing for a Procurement
- Next Steps

Objective

- The Government of Canada is consulting with industry to support the development of an approach for leveraging economic benefit from the Joint Fires Modernization (JFM) Project.
- Feedback from industry will be used to:
  - Validate the Government of Canada's analysis of Canadian capabilities related to the JFM Project; and
  - Develop an economic leveraging approach in support of the JFM Project.

Industrial and Technological Benefits (ITB) Policy

- The Industrial and Technological Benefits (ITB) Policy has been in place since 1986. In 2014, it was transformed to include the Value Proposition (VP).
  - Winning bidders are selected on the basis of price, technical merit and their Value Proposition.
  - The VP includes bidder's commitment to undertake work in Canada and will generally account for at least 10 percent of the overall score.
  - Companies awarded procurement contracts must undertake business activity in Canada equal to the value of the contract.

Value Proposition

- Commitments/activities proposed at bid time
- Rated and weighted during bid evaluation

Outstanding Obligation

- Activities identified after contract award
- Brings identified activities up to 100 percent of contract value

Value Proposition Pillars

1. Supports the long-term sustainability and growth of Canada's **defence industry**;
2. Supports the growth of bidders' Canadian operations as well as their **suppliers in Canada**, including SMBs in all regions of the country;
3. Enhances innovation through **research and development (R&D) in Canada**;
4. Increases the **export** potential of Canadian-based firms; and
5. Promotes **skills development and training** to advance employment opportunities for Canadians.

The VP is a flexible framework

On a procurement-by-procurement basis, there is flexibility to:

- Increase/decrease the weight of the VP
- Weigh individual evaluation criteria differently
- Apply all or some of the evaluation criteria
- Add additional evaluation criteria
- Apply mandatory requirements
- Develop different rating grids

Informed by:

Industry engagement

Research and analysis

3rd party experts

The Value Proposition Bid Proposal

The VP bid proposal is prepared by the prime contractor and typically consists of:

Mandatory Requirements

- Ex: A commitment of 15% of bid price for work with SMBs

Rated Criteria

- Based on Commitments under the Value Proposition Pillars

Identified Transactions

- Equal to no less than 30% of bid price

Key Industrial Capabilities (KICs)

- Key Industrial Capabilities (KICs) were introduced in April 2018 to ensure that defence procurements can better drive innovation, exports and the growth of firms through the ITB Policy.

- KICs represent areas of emerging technology with the potential for rapid growth, established capabilities where Canada is globally competitive, and areas where domestic capacity is essential to national security.

- KICs are defined as the skills, technologies, and supply chains required to support the growth of these capabilities. They are broader than the companies associated with the end solution; they include the post-secondary institutions that develop skills and research, the SMEs that form part of the value chain, and intellectual property that is developed in Canada.

Key Industrial Capabilities (KICs)

EMERGING TECHNOLOGIES

- Advanced Materials
- **Cyber Resilience**
- Remotely-piloted Systems and Autonomous Technologies
- **Artificial Intelligence**
- Space Systems
- Clean Technology

LEADING COMPETENCIES & CRITICAL INDUSTRIAL SERVICES

- Aerospace Systems & Components
- **Defence Systems Integration**
- Ground Vehicle Solutions
- Marine Ship-Borne Mission and Platform Systems
- Shipbuilding, Design and Engineering Services
- **Training & Simulation**
- Armour
- **Electro Optical / Infrared Systems**
- In-Service Support
- Munitions
- Sonar & Acoustic Systems

Industry Consultation

- The Government of Canada is seeking industry feedback to support the development of the economic leveraging approach for the JFM Project.

- Industry engagement questions were published on canadabuys.canada.ca in advance of the JFM Project Industry Day.

- We encourage all potential bidders and suppliers to provide comments.

Preparing for a Procurement

Potential bidders and suppliers should:

- Familiarize themselves with the ITB Policy & VP;
- Determine the **Canadian Content Value** of their products and services, and those of their suppliers;
- Engage **Regional Development Agencies (RDAs)**; and
- Determine what **certifications and credentials** may be required to participate in the project.

Regional Development Agencies (RDAs)

- RDAs have teams dedicated to assisting potential bidders and prime contractors to undertake ITB-related activities:
  - RDAs can lead targeted supplier development tours;
  - Facilitate Business to Business (B2B) meetings; and
  - Provide regional capability lists

Regional Development Agency	Contact	E-mail	Phone
Atlantic Canada Opportunities Agency (ACOA)	Sam Fotia	sam.fotia@acoa-apeca.gc.ca	(613) 941-7241
Canada Economic Development for Quebec Regions (CEDQ)	Vincent Marmion	vincent.marmion@dec-ced.gc.ca	(819) 997-5693
Federal Economic Development Agency for Southern Ontario (FedDev)	Robyn Hori	robyn.hori@feddevontario.gc.ca	(613) 612-2495
Federal Economic Development in Northern Ontario (FedNor)	Natalie Brabant	natalie.brabant@fednor.gc.ca	(705) 626-8897
Pacific Economic Development Canada (PacifiCan) and Prairies Economic Development Canada (PrairiesCan)	Jeff Graham	jeff.graham4@prairiescan.gc.ca	(613) 617-1083

Next Steps

- Written feedback regarding the ITB/VP questions is to be submitted to the PSPC Contracting Authority.
- Information provided to the Government of Canada will be considered in the development of the economic leveraging approach for the JFM project.
- For more information on Canada's Industrial and Technological Benefits Policy, please visit: http://www.canada.ca/itb

For any ITB related questions, contact:

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