



# *SPACE PROJECTS*

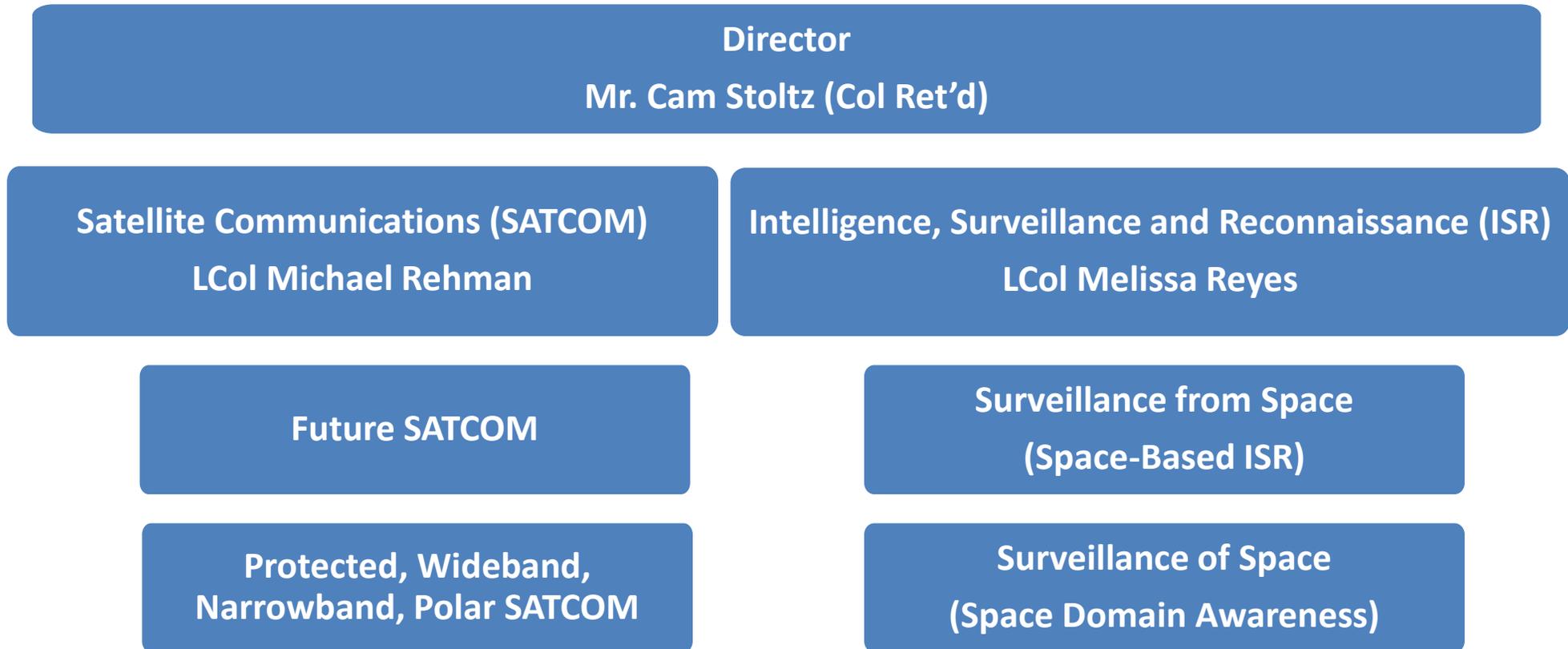
*PRESENTED BY MR. CAM STOLTZ (COL RET'D)*  
*DIRECTOR SPACE REQUIREMENTS (DSR)*

*CADSI RCAF OUTLOOK*  
*22 APRIL 2021*

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# DSR – Capability Focus



Program Manager SATCOM :

Program Manager Space-Based ISR :

Program Manager Space Domain Awareness :

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# Current Status of DSR Initiatives and Projects - SATCOM

Initiatives

Projects

**Concept Development**

- Follow On WB
- Follow On NB
- Protected MILSATCOM – Strat
- Protected MILSATCOM -Tactical
- Follow On Polar

**ID**

- None

**OA**

- ESCP-P

**DEF**

- TNS-GEO Phase 2

**CLOSE**

- MG (2021)

**IMP**

- TNS-GEO Phase 1
- PMSC

PM: ADM (IM) – DGIMPD / DPDCS  
Mr. Dave Campbell

# Current Status of DSR Initiatives and Projects - ISR

Initiatives

Projects

Pre-ID

- Space C2 (Space COP)
- SPEED
- Polar Epsilon 3
- SHOC
- SofS 3

ID

- None

OA

- SofS 2
- DESSP

DEF

- None

IMP

- PE2
- MEOSAR

PM: ADM (IM) – DGIMPD / DPDCS  
Mr. Patrick Falardeau

# Priorities for next 3 years - SATCOM

## Move to ID

- Protected MILSATCOM – Strategic
- Protected MILSATCOM – Tactical

## Move to Option Analysis

- None

## Move to Definition

- ESCP-P

## Move to Implementation

- TNS-GEO Phase 2
- PMSC main project move to “**Close**” phase via ECP 2022 and transfer remaining “Implementation” to RCN until 2029 (VISSC2 installation contracts)

# Priorities for next 3 years - ISR

## Move to ID

- Space C2
- SPEED
- Polar Epsilon 3

## Move to Option Analysis

- None

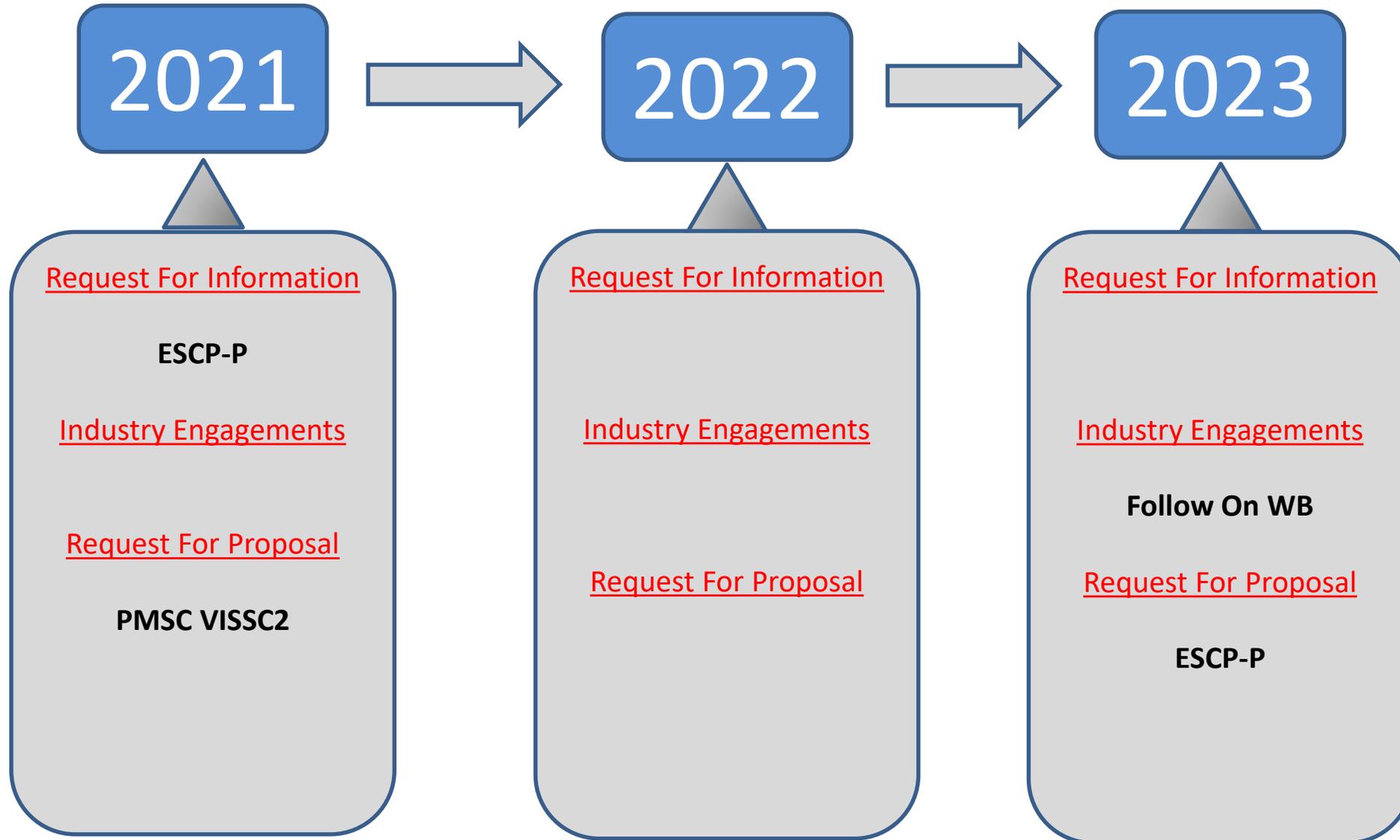
## Move to Definition

- SofS 2 (Fall 2021)
- DESSP (Summer 2023)

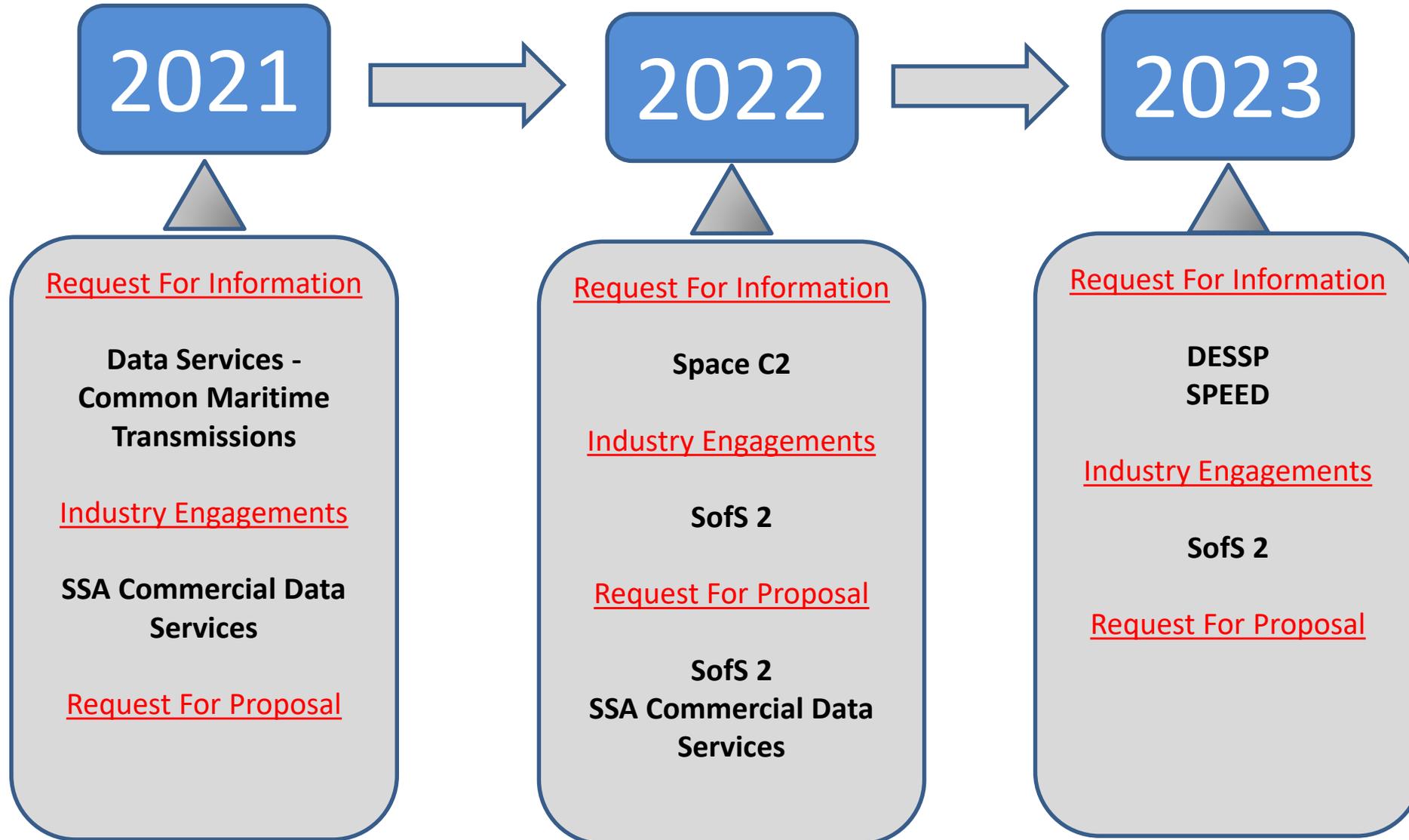
## Move to Implementation

- SofS 2 – GBO (2024)

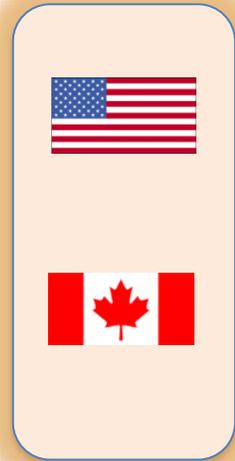
# Expected Industry Activities - SATCOM



# Expected Industry Activities - ISR



# Tactical Narrowband SATCOM - Geosynchronous (TNS-GEO)



## PROJECT SCOPE:

Guaranteed, reliable and secure access to Narrowband UHF service to support Beyond Line of Sight (BLOS) Comms for 15 years and worldwide coverage (65°S – 65°N)

## NEXT STEPS:

Phased Implementation – 2021, 2023

## PROJECT STATUS:

- Milestones:
  - FMS Cases: 2019, 2023
  - IOC: 2023/2024
  - FOC: 2025
  - Close-Out: 2025
- Canadian MUOS Service
  - Current Constellation 2023-2029
  - MUOS Extension 2029-2038
- Estimate: \$500 M - \$1 B
- Int'l Partners: USA

## CONTACT INFORMATION

Project Director: Mr. Abde Bellahnid

Email: [Abde.Bellahnid@forces.gc.ca](mailto:Abde.Bellahnid@forces.gc.ca)

# Enhanced Satellite Communications Project – Polar (ESCP-P)



## PROJECT SCOPE:

Guaranteed, reliable and secure access to Arctic BLOS Narrowband and Wideband Communications, NB: (65°N - 90°N) including IBS and WB: (65°N - 90°N)

Interoperability with US DoD and NATO

## NEXT STEPS:

PA (Def): Oct 2022

## PROJECT STATUS:

- Milestones:
  - Contract Award and RFP: TBD
  - RFI: Close 18 Mar 2021
  - IOC: 2032
  - FOC: 2036
  - Close Out: 2037
- Estimate: \$ 1 B – 4.99 B
- Int'l Partners: NATO, US, NO, DK, NZL, AUS, FR, UK

## CONTACT INFORMATION

Project Director: Mr. Abde Bellahnid

Email: [Abde.Bellahnid@forces.gc.ca](mailto:Abde.Bellahnid@forces.gc.ca)

# Defence Enhanced Surveillance from Space Project (DESSP)



**PROJECT SCOPE:** DESSP is the DND/CAF planned replacement and upgrade of the DND capabilities provided within the RADARSAT Constellation Mission and Polar Epsilon 2 ground stations, which include protecting the maritime approaches to Canada, including the Arctic, and globally.

## **NEXT STEPS:**

Defence Capability Board 2 Engagement - Summer 2021 (receive endorsement of preferred capability option)

## **PROJECT STATUS:**

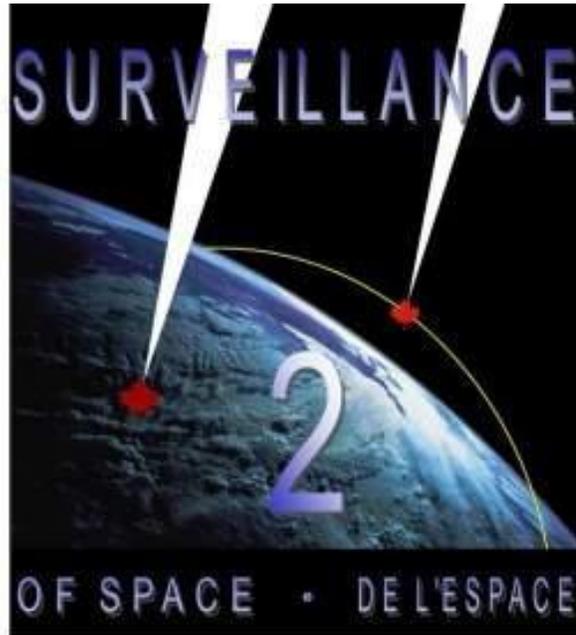
- Milestones:
  - First RFI ongoing: Industry responses received and being amalgamated
  - Possible RFI: 2023
  - RFP Release: TBD
  - Contract Award: TBD (~2027)
  - Estimate: \$1B - \$4.99B
  - IOC: 2033
  - FOC: 2034

## **CONTACT INFORMATION:**

Project Director: Mr. Chad Kabatoff

Email: [chad.Kabatoff@forces.gc.ca](mailto:chad.Kabatoff@forces.gc.ca)

# Surveillance of Space 2 (SofS 2)



## PROJECT SCOPE:

SofS 2 will enable the RCAF to continue performing deep space surveillance for the protection of Canadian deep space assets, mission assurance for space-based capabilities that support the CAF, and to ensure Canada is an active contributor to the operations of the US Space Surveillance Network (SSN).

Preferred option consists of both Space-Based Optical (SBO) and Ground-Based Optical (GBO) systems.

## NEXT STEPS:

Project Approval to enter Definition Phase (Fall 2021) in order to begin engineering studies and issue Requests for Proposals (RFPs).

## PROJECT STATUS:

- In Options Analysis
  - Project Definition: Fall 2021
- | <u>GBO</u>  | <u>SBO</u>  |
|-------------|-------------|
| • Imp: 2024 | • Imp: 2025 |
| • IOC: 2025 | • IOC: 2029 |
| • FOC: 2026 | • FOC: 2030 |
- Preliminary Estimate
  - Total Project Value: \$100M-\$250M

## CONTACT INFORMATION:

Project Director: Maj Charles Wood

Email: [Charles.wood2@forces.gc.ca](mailto:Charles.wood2@forces.gc.ca)

# Space Command and Control (C2) Mission System



## PROJECT SCOPE:

Canadian contribution to the multi-nation Combined Space Operations (CSpO) Space C2 Project. Aims to develop and deploy a distributed Space Battle Management C2 Mission System to improve and share our Space Domain Awareness & Space Common Operating Picture in support of Continental Defence.

## NEXT STEPS:

Seeking project approval. Anticipate RFI once approved.

## PROJECT STATUS:

- Phase: Pre-Identification
- Space Common Operating Picture (COP) is a Minor Capital Project (start 2021/2022)
- Estimate: \$25M-\$50M (acquisition)
- Int'l Partners: USA, AUS, UK, NZ

## CONTACT INFORMATION:

Project Director: Maj Joseph Gsell

Email: [joseph.gsell@forces.gc.ca](mailto:joseph.gsell@forces.gc.ca)

# Space-Based Processing, Exploitation and Dissemination (SPEED)



## PROJECT SCOPE:

To deliver a Processing, Exploitation and Dissemination (PED) capability which will enable the CAF to efficiently address the current and future big data problems of space-based imagery, through developing Artificial Intelligence / Machine Learning applications, and determining ways to disseminate the data over the correct networks with the required protection.

## NEXT STEPS:

DCB 1 process to get project approval

## PROJECT STATUS:

- Phase: Pre-Identification
- Possible RFI: 2023
- Estimate: \$400M-\$500M
- Int'l Partners: TBD

## CONTACT INFORMATION:

Project Director: Mr. Joe Bishoff

Email: [Josef.Bishoff@forces.gc.ca](mailto:Josef.Bishoff@forces.gc.ca)

# Polar Epsilon 3 (PE3)



## PROJECT SCOPE:

A major capital project intended to exploit any data of utility to DND/CAF from the Earth Observation Service Continuity (EOSC) concept. EOSC is being led by the Canadian Space Agency (CSA).

## NEXT STEPS:

Unknown until EOSC is further defined

## PROJECT STATUS:

- Phase: Pre-Identification
- Estimate: \$300M-\$350M
- Int'l Partners: Unknown

## CONTACT INFORMATION:

Project Director: TBD

Email: TBD

# Commercial Data Services – Geolocation of Common Maritime Transmissions



## PROJECT SCOPE:

Procuring space-based, commercially obtained and processed geolocated common maritime transmissions.

## NEXT STEPS:

Issue RFI (2021)

## PROJECT STATUS:

- Service:
  - Request for Information: 2021/2022
- Estimate: \$TBD
- Int'l Partners: N/A

## CONTACT INFORMATION:

Project Director: LCdr Mike Bielby

Email: [Michael.Bielby@forces.gc.ca](mailto:Michael.Bielby@forces.gc.ca)

# Space Situational Awareness (SSA) Commercial Data Services



## PROJECT SCOPE:

Acquisition of commercial SSA metric data.  
Request for Proposal (RFP) for SSA data acquisition over a number of years. Could be a mix of optical and radar metric data.

## NEXT STEPS:

Industry Engagement Day Fall 2021  
RFP Release: Apr 2022

## PROJECT STATUS:

- Milestones:
  - Industry Engagement Day: Fall 2021
  - RFP Release: Apr 2022
  - Contract Award: 2022
  - IOC: 2022 (parallel ops)
  - FOC: at Sapphire End of Life (EoL)
  - Close Out: est. 2026
- Preliminary Estimate: \$1M-\$4M / year

## CONTACT INFORMATION:

Project Director: Mr. Pascal Tremblay

Email: [pascal.tremblay2@forces.gc.ca](mailto:pascal.tremblay2@forces.gc.ca)

# Connective Tissue

## Satellite Communications (SATCOM) Capabilities

SATCOM capabilities will provide beyond line of sight communications to domestic and deployed CAF operations and platforms, including the Arctic region

### DND/CAF

RCAF, CA, RCN, ADM (IM), ADM (IE)  
ADM Mat, DRDC

### Canadian OGDs

ISED, CSA, CG, RCMP, etc.

### International Partners

NORAD, FVEYs, NATO

## Intelligence, Surveillance and Reconnaissance (ISR) Capabilities

### SB-ISR Capabilities

Use/Interoperable with other DND/CAF initiatives

SPEED working with JISR and considering PED requirements  
Studying Courses of Action for DND/CAF Satellite Operations Centre

DESSP will provide ISR data for RCN, CFINTCOM

Working with Allied Capabilities and Programs

- Contributions to strategic burden sharing

### SDA Capabilities

SofS 2, with its capabilities, will protect Canadian satellites in orbit

Combined Space Operations (CSpO) Initiatives  
- Shared space data, ground infrastructure capabilities



## *QUESTIONS?*

*MR. CAM STOLTZ (COL RET'D)*  
*DIRECTOR SPACE REQUIREMENTS (DSR)*

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