



# *SPACE PROJECTS*

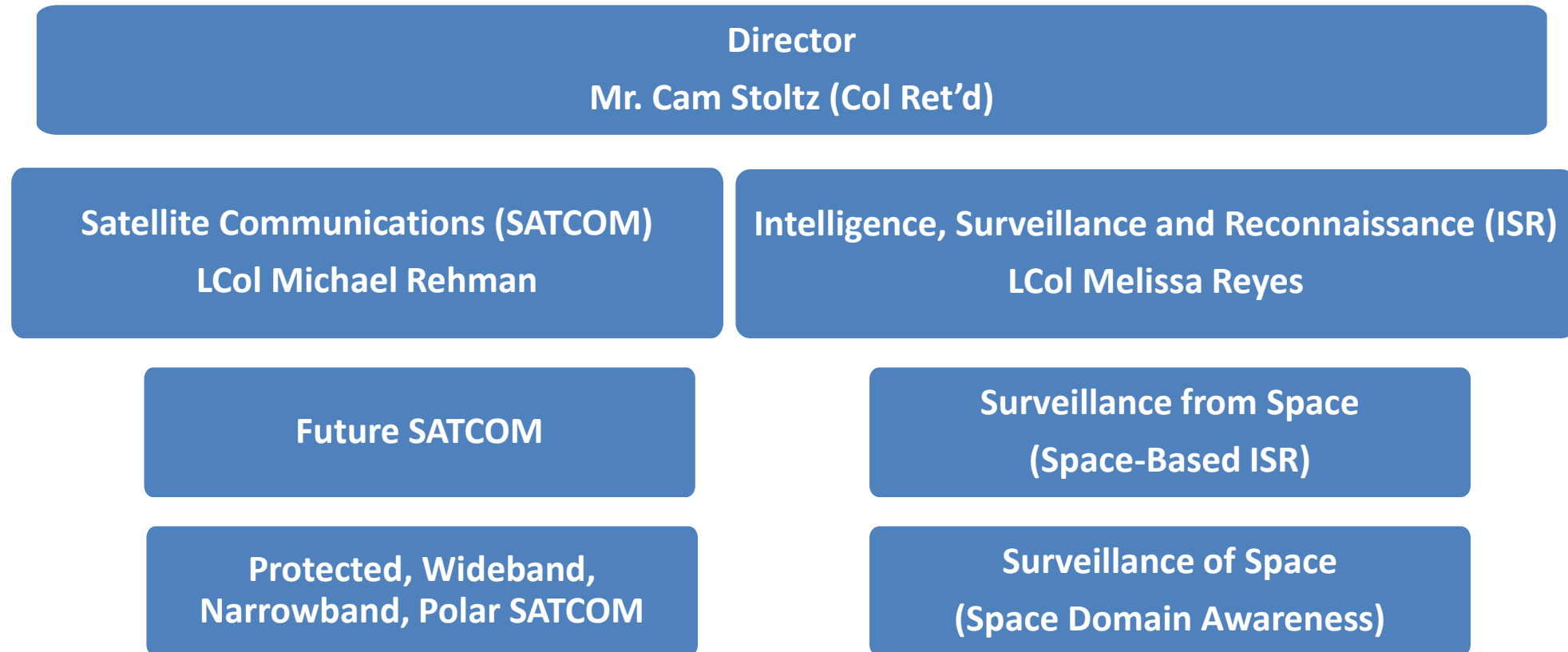
*PRESENTED BY MR. CAM STOLTZ (COL RET'D)*  
*DIRECTOR SPACE REQUIREMENTS (DSR)*

*CADSI RCAF OUTLOOK*  
*22 APRIL 2021*

## WARNING

THE CONTENTS OF THIS BRIEF ARE THE INTELLECTUAL PROPERTY OF THE DEPARTMENT OF NATIONAL DEFENCE.  
NO REPRODUCTION, COPYING, DISTRIBUTION, OR USE OF THIS MATERIAL MAY BE MADE WITHOUT THE WRITTEN AUTHORIZATION  
FROM THE DIRECTOR SPACE REQUIREMENTS

# DSR – Capability Focus



Program Manager SATCOM :

Program Manager Space-Based ISR :

Program Manager Space Domain Awareness :

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

Chad Kabatoff, [chad.kabatoff@forces.gc.ca](mailto:chad.kabatoff@forces.gc.ca)

Pascal Tremblay, [pascal.tremblay2@forces.gc.ca](mailto:pascal.tremblay2@forces.gc.ca)

# 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

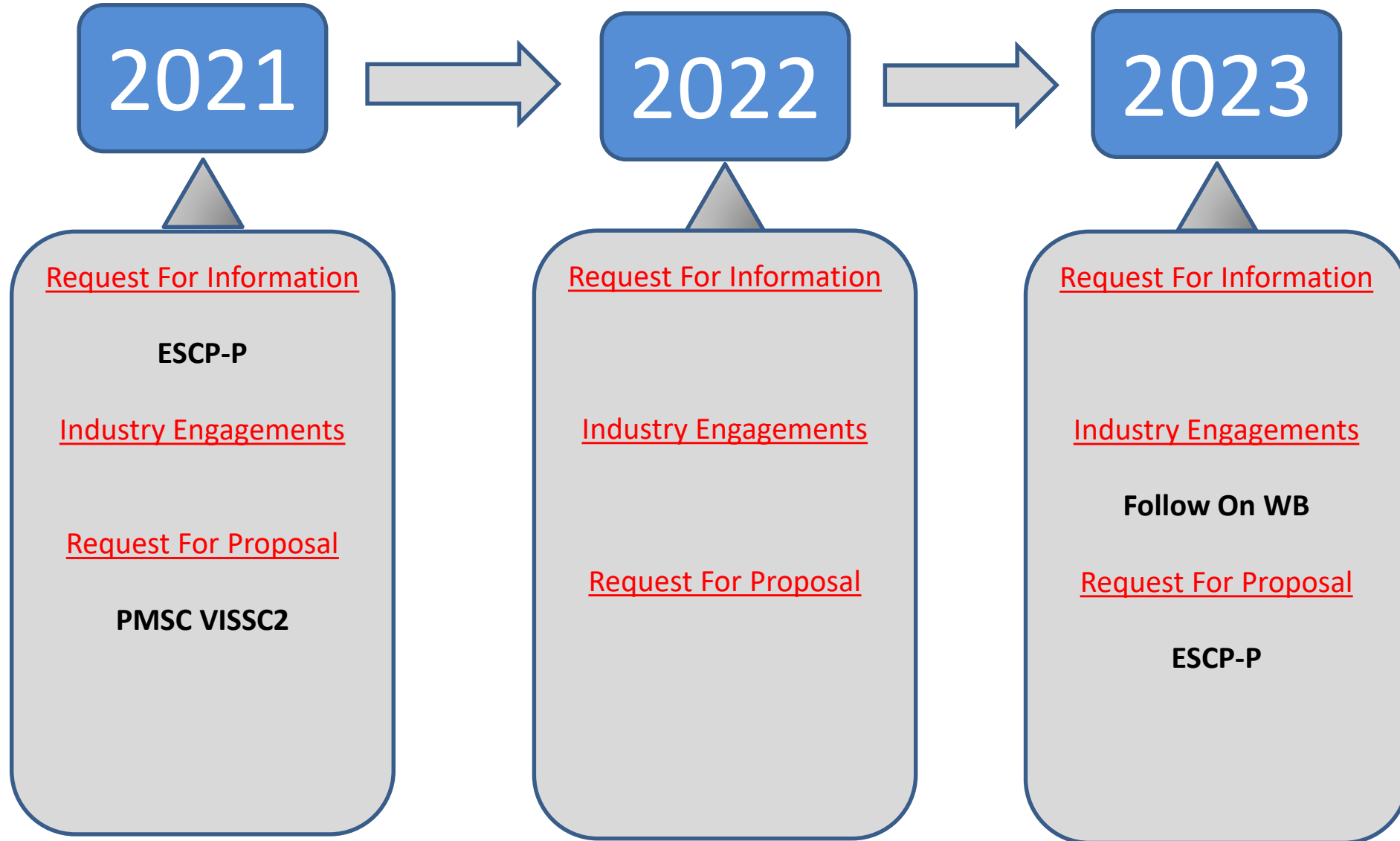
## Move to Definition

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

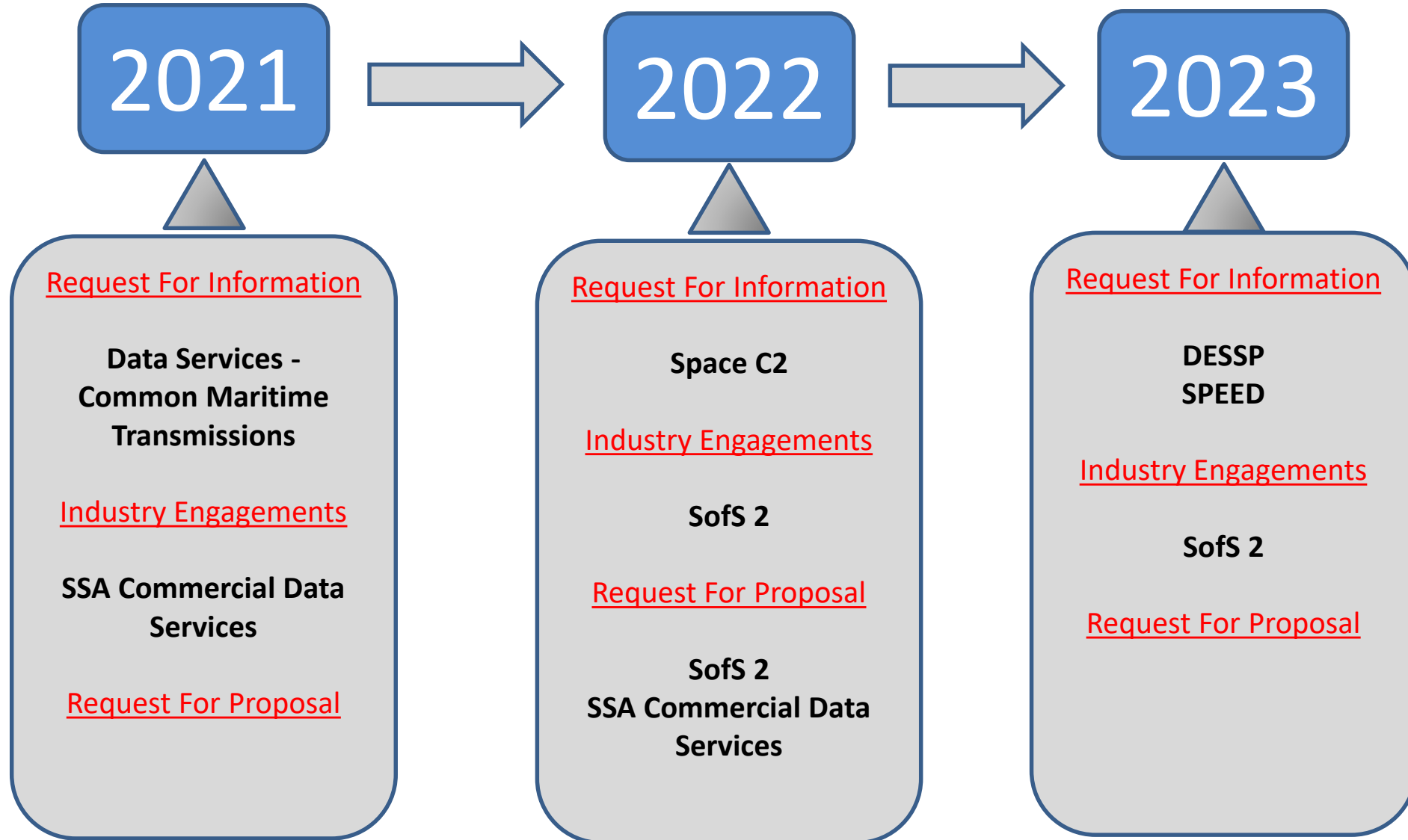
## Move to Implementation

- 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:

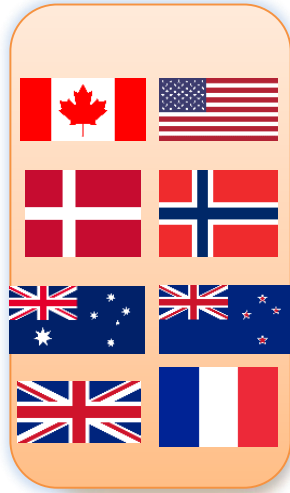
- Milestones:
  - FMS Cases: 2019, 2023
  - IOC: 2023/2024
  - FOC: 2025
  - Close-Out: 2025
- Canadian MUOS Service
  - Current Constellation 2023-2029
  - MUOS Extension 2029-2038
- Estimate: \$500 M - \$1 B
- Int'l Partners: USA

## 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

### SDA 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

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

### Working with Allied Capabilities and Programs

- Contributions to strategic burden sharing

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



## *QUESTIONS?*

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

### WARNING

THE CONTENTS OF THIS BRIEF ARE THE INTELLECTUAL PROPERTY OF THE DEPARTMENT OF NATIONAL DEFENCE.  
NO REPRODUCTION, COPYING, DISTRIBUTION, OR USE OF THIS MATERIAL MAY BE MADE WITHOUT THE WRITTEN AUTHORIZATION  
FROM THE DIRECTOR SPACE REQUIREMENTS