



Joint Wargaming Section – Joint Research and Analysis Branch



Aim

To introduce the CJWC Wargaming Section and how it supports the CJWC mission to enhance preparedness of Joint Forces to operate in a pan-domain environment





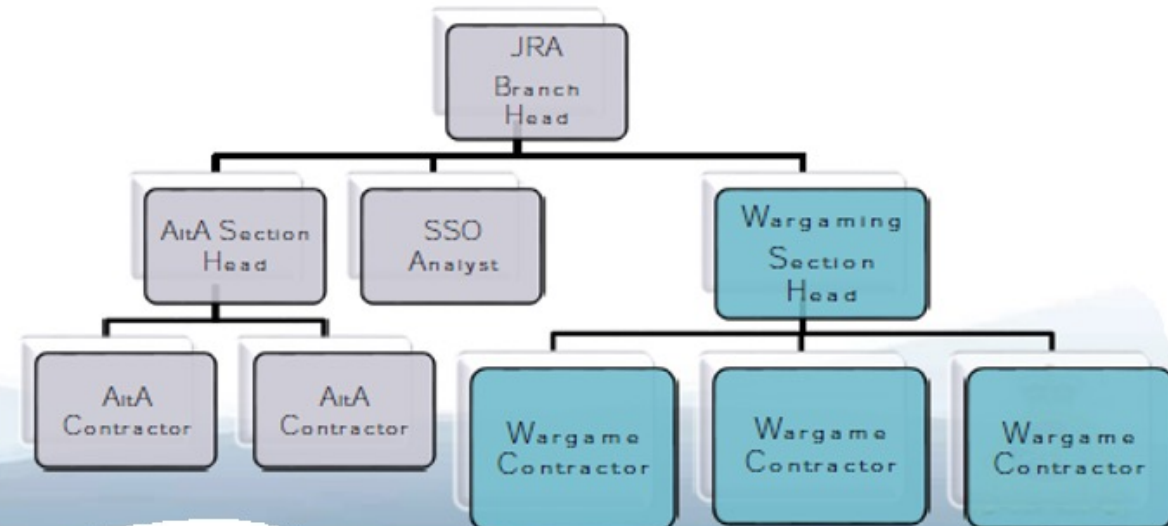
Who Are We?

CJWC Mission:

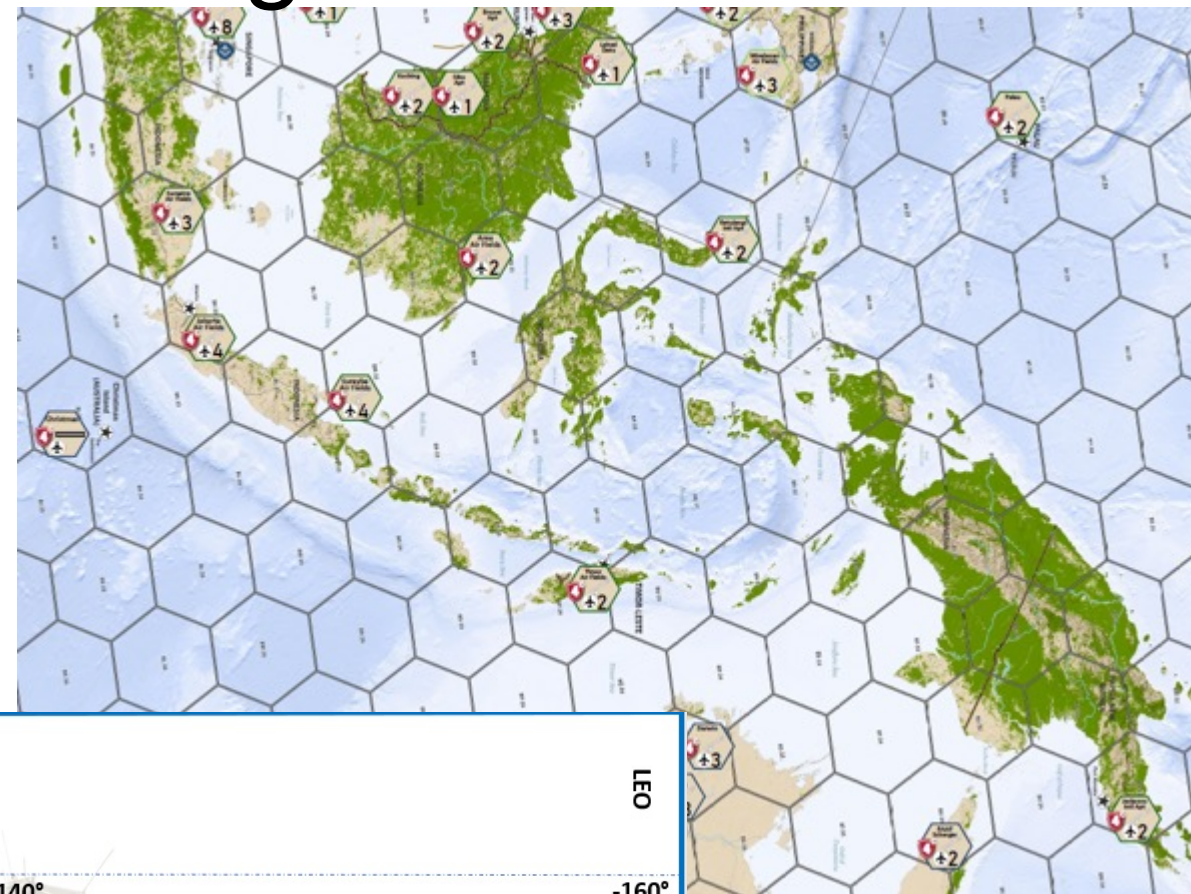
The Canadian Joint Warfare Centre (CJWC) will foster the improvement of the Joint Force to enhance preparedness of the Joint Forces for operations in a pan-domain environment.

Joint Research and Analysis Branch Role:

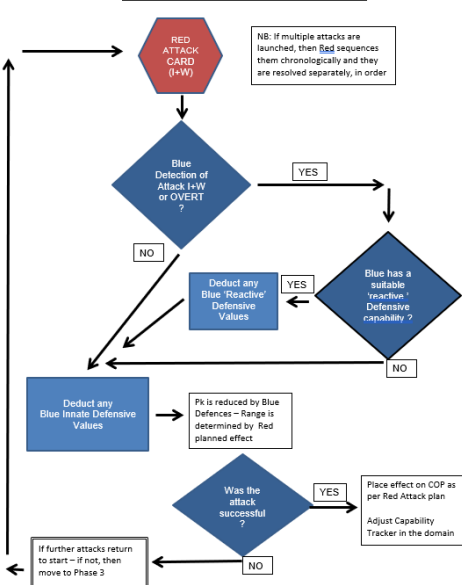
Produce Joint Warfare knowledge and advise on the use of that knowledge using tools and processes such as *Alternative Analysis*, *Red Teaming* and/or *Wargaming*



3CSD - Space Wargame



Phase 2 - Offensive and Defensive Action Flowchart



CAN SpOC 2

Space Operations Squadron
24. RÉGIMENT DES OPÉRATIONS SPATIALES

Ottawa

7 Space Operations Squadron is responsible for integration of space effects in operational planning, strategy analysis, current operations, force generation, and readiness. Providing the Joint Force Space Component Command with time-relevant command and control options to include defining the Joint Space Support Team.
*Developing a program leading to seamless integration between Intelligence, Information Operations, Electronic Warfare, and Space Domain Awareness.
*The provision of Space Domain Awareness to stakeholders through the integration of space-enabled effects in operations.

LEO Sapphire 0

SDA

Sat	Band	Long	Incl	Perigee	Period
Sapphire	S band			778	100.43

Sapphire Satellite - an autonomous spacecraft with an electro-optical payload which acts as a contributing sensor to the United States Space Surveillance Network (SSN). It operates in a circular, sun synchronous orbit at an altitude of approximately 700 kilometers and image a minimum of 360 space objects daily in orbits ranging from 6,000 to 40,000 kilometers in altitude.

JAXA Ops Centre 2

JAXA
Explore to Realize

Tokyo

The Japan Aerospace Exploration Agency (JAXA) was born through the merger of three institutions, namely the Institute of Space and Astronautical Science (ISAS), the National Aerospace Laboratory of Japan (NAL), and the National Space Development Agency of Japan (NASDA). It was designated as a core performance agency to support the Japanese government's current aerospace development and utilization. JAXA, therefore, can conduct integrated operations from basic research and development, to application.

Commercial SSA Sensors 0

Tokyo

To protect satellites and astronauts from space debris, thorough understanding their orbits is essential. Space Situational Awareness (SSA) is a key for such understanding. JAXA performs (1) monitoring space debris, (2) database construction of their orbits, (3) analysis of their approach to satellites, and (4) publication of their results in the atmosphere.

GEO SuperBird Constellation 0

SATCOM

Sat	Band	Long	Incl	Perigee	Period
superbird7	Ku, Ka	145.77	0.12	35718	1436.1
superbird8/9/10/11	Ku, Ka	138	0	35714	1436.1

LEO ALOS-2 0

ISR

Sat	Band	Long	Incl	Perigee	Period
ALOS-2 (Earth-2)	L	97.92	636	97.93	

GEO Quasi-Zenith Satellite System 0

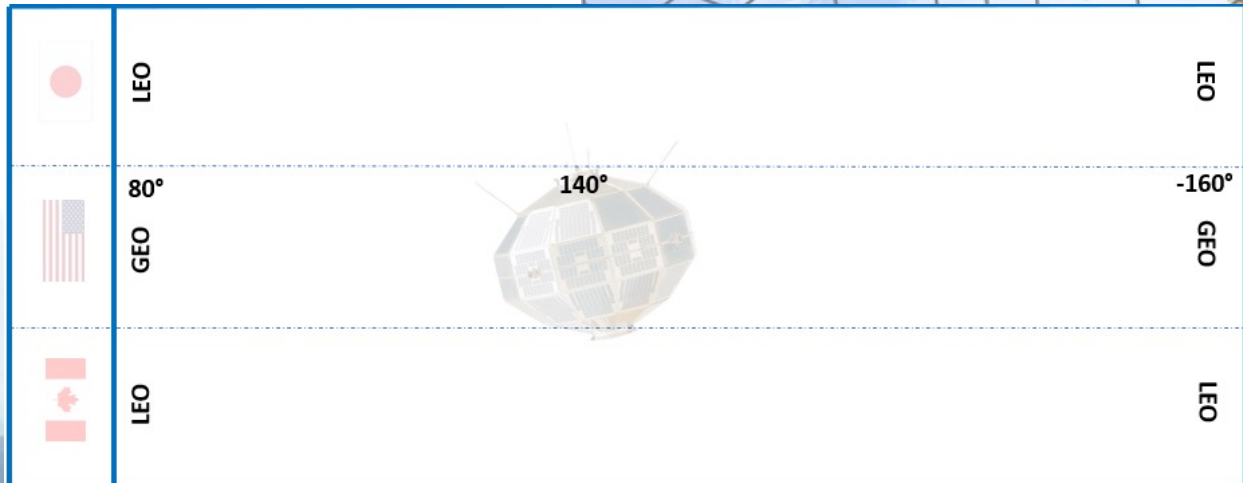
PNT

Sat	Band	Long	Incl	Perigee	Period
QZSS-1	L	138.99	40	32618	1436
QZSS-2	L	146.94	44	32663	1436.12
QZSS-3	L	127	0	39794	1436.1
QZSS-4	L	139	40.5	32622	1435.9

LEO IGS Constellation 2

ISR & MW

Sat	Band	Long	Incl	Perigee	Period
IGS Optical 6		97.2	485	94.5	
IGS Radar 3		97.4	487	94.4	
IGS Optical 7		97.2	485	94.5	
IGS Radar 3		97.3	500	94.6	
IGS Radar 8		97.33	484	94.37	
IGS SA		97.89	588	96.47	
IGS-6A		97.48	512	94.89	
IGS-7A		97.5	509	94.85	
IGS-8A		97.5	512	94.85	
IGS-9		97.5	510	94.85	





Realizing the Potential of CJWC Wargaming

- Raising awareness of existing capabilities
- Increased development of relevant digital and analog wargames
- Myth busting
- Education
- Training / Courseware
- Liaison with / advice to senior leaders





Wargaming Advisor's Course

- Purpose of the course: Intro to concepts & capability
- Course October 2023
- Target Audience – External Stakeholders
- Teaching Points
 - Assessment
 - Planning
 - Construction
 - Execution
 - Post Game Analysis





A year in review... FY22/23

- Five Wargaming Courses
- Canadian Army – FORCE 2025
- 1st Canadian Division – Unified Resolve
- Global Integrated Wargame 2022
- CJOC – Vigilant Shield 2023
- 3 CSD – Space Wargame Australia/Japan/France/NATO/Germany
- RCAF Warfare Centred – Human Manned Teaming
- Canadian Forces College – Wargaming Support
- CJOC – CONPLAN Jupiter

.....What's next?

NATO Multi National Wargaming

CJOC – Vigilant Shield 2024

Canadian Army – GRTF





Stakeholders

- CJWC Branches (internal)
- Canadian Joint Operations Command (CJOC)
- Warfare Centres (Canadian Army, Royal Canadian Navy, Royal Canadian Air Force)
- Chief of Force Development (CFD)
- 1st Canadian Division
- Joint Task Forces Across Canada
- NATO/Allies
- USMC Wargames Lab
- USAF Wargames Division
- US Joint Staff J7



U.S. AIR FORCE





Questions?

