



# DEFENCE & INTELLIGENCE

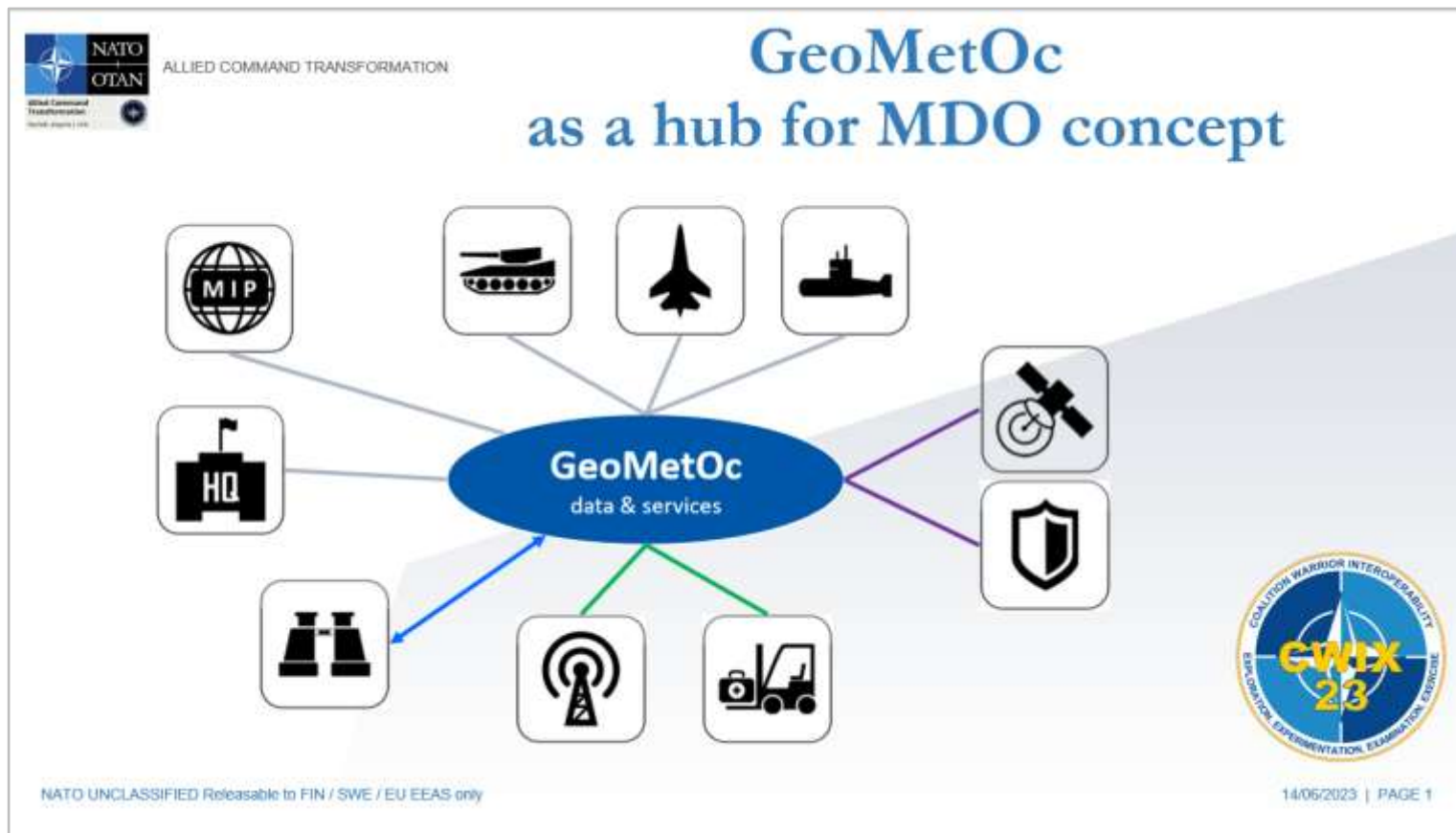
## Panel Discussion 3 Geospatial Intelligence (GEOINT): The Backbone of Multi-Domain Operations

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*Image générée par IA*

# GEOINT: THE BACKBONE OF MULTI-DOMAIN OPERATIONS

***GEOINT IS NOT A LAYER — IT IS THE INTEGRATION FRAMEWORK OF MDO***



## GEOINT

- ✓ GeoMetOc information is the support of GEOINT analysis
- ✓ GEOINT enables **synchronization across all domains** (Land / Air-Space / Maritime / Space / Cyber ...)
- ✓ GEOINT allows **shared spatial-temporal understanding**
- ✓ GEOINT **Is key to support the COP** – Common Operational picture

# FROM STATIC MAPS TO DYNAMIC GEOINT

TURNING DATA INTO TIMELY, TRUSTED AND ACTIONABLE INTELLIGENCE ACROSS DOMAINS

## STATIC MAPS





PAST: STATIC, SLOW, AND FRAGMENTED

-  Paper / PDF maps  
Single source, fixed scale
-  Disconnected datasets  
Silos, limited sharing
-  Low update frequency  
Outdated information
-  Limited interoperability  
Standards gaps
-  Manual processes  
Time-consuming production and exploitation



STATIC – DELAYED – LIMITED SHARING – LOW EFFECTIVENESS

## KEY CHALLENGES ON THE TRANSFORMATION PATH

-  **INTEGRATION OF DATA**  
Cross-domain data fusion (data lakes, multi-source)
-  **INTEROPERABLE SYSTEMS**  
Common standards, data models and APIs for seamless information exchange
-  **COMPUTING SPEED**  
Near real-time processing  
Edge computing / Embedded IA
-  **TRUST INTO DATA TO SUPPORT DECISION MAKING PROCESSES**  
Data quality, lineage, provenance  
Secure sharing frameworks

## ENABLERS

-  Cloud & Data Lakes
-  AI / ML Analytics
-  Cybersecurity by design
-  Standards & Governance
-  People & Training

 **OBJECTIVE: INFORMATION SUPERIORITY FOR DECISION ADVANTAGE**  
FASTER – SHARED – RELIABLE – ACTIONABLE

## DYNAMIC GEOINT

FUTURE: DYNAMIC, INTEGRATED, AND ACTIONABLE

-  Multi-source real-time data  
Satellites, UAVs, sensors, open data
-  Integrated & fused information  
Cross-domain, multi-level
-  Continuous updates  
Near real-time GEOINT
-  Interoperable by design  
Standards-based, FMN ready
-  Automated & AI-enabled  
Faster production, assisted analysis and prediction



DYNAMIC – REAL TIME – SHARED – HIGH EFFECTIVENESS

SUPPORTING MULTI-DOMAIN OPERATIONS



LAND



MARITIME



AIR



SPACE




CYBER



ELECTROMAGNETIC SPECTRUM

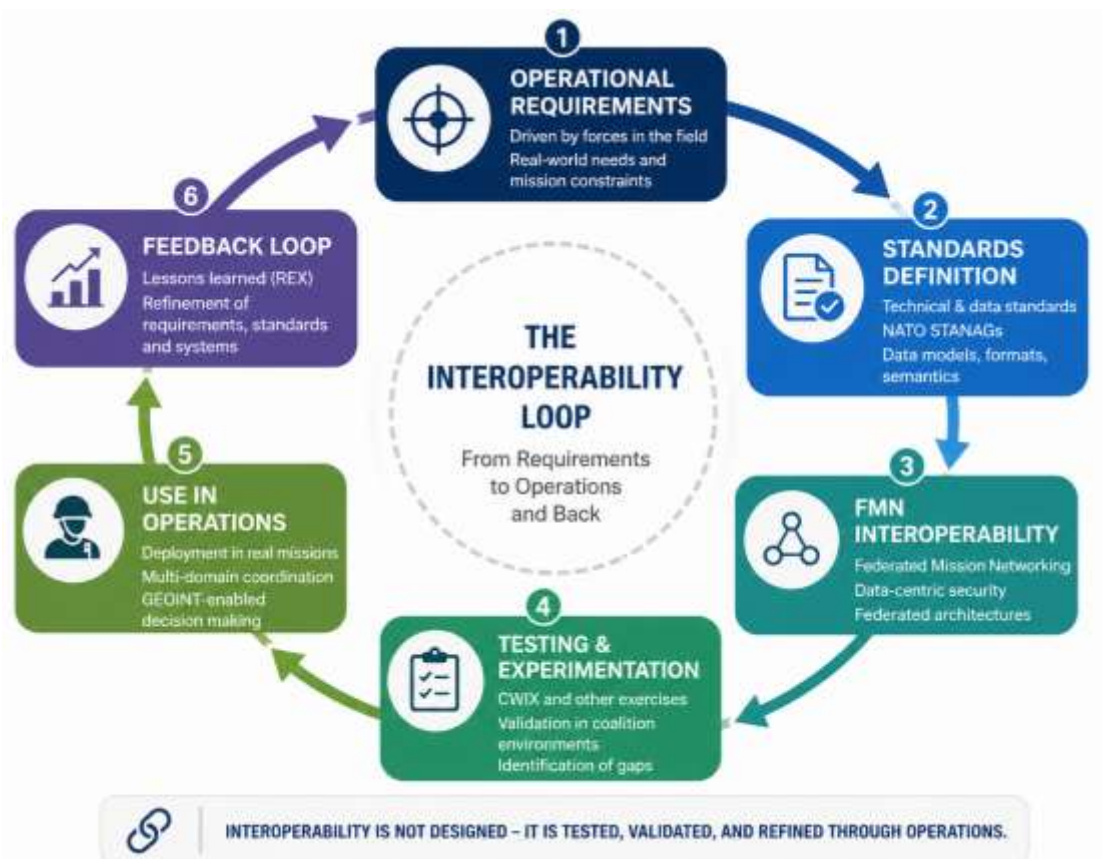


LOGISTICS

 **INTEROPERABILITY IS THE FORCE MULTIPLIER**  
NOT JUST A TECHNICAL ISSUE, A WARFIGHTING IMPERATIVE

# CWIX AND FMN INSIGHTS

*Interoperability is the battlefield*



## NOT JUST A TECHNICAL ISSUE

- It responds to **operational constraints**
- It is an **agreement** between partners - multi-systems environments
- It makes GEOINT **effective**
- It is **real time** (you CANNOT assume you've it for ever)
- It requires **testing to be ready** during coalition warfare

**IT MAKES COALITION WARFARE POSSIBLE**

# THE FRENCH COOPERATION IGN X MOD

## RAPIDLY TEST/ADAPT INNOVATIONS TO DEFENSE DOMAINS



« Géographie militaire du futur »

## AI LAND COVER

### FOR OPERATIONAL TERRAIN UNDERSTANDING

IGN produces land cover/use data over France from AI model (airborne imagery)

#### CHALLENGES

- Use satellite imagery vs airborne
- Extend the AI model beyond national boundaries
- Adapt classification to defense operational uses (trafficability ...)



## TACTICAL LIDAR

### FOR NEAR REAL-TIME 3D GEOINT

IGN leads national high density Lidar program with (classified point clouds, DSM/DTM ...) – airborne acquisition

#### CHALLENGES

- Define products from HD Lidar data acquired with drones
- Density 10 vs 100 points / sqm
- Not possible to use national data bases to classify points
- Production time < 24-48H (next to the battlefield)



The background of the slide is a stylized topographic map. It features irregular, organic shapes in various shades of blue (from light to dark) and tan, representing different elevation levels or terrain types. The shapes are interconnected and fill the entire frame.

**THANK YOU**