THE USE OF MODERN TECHNOLOGY IN THE MILITARY DECISION MAKING PROCESS

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- Department of Mechanised Forces

AGENDA:

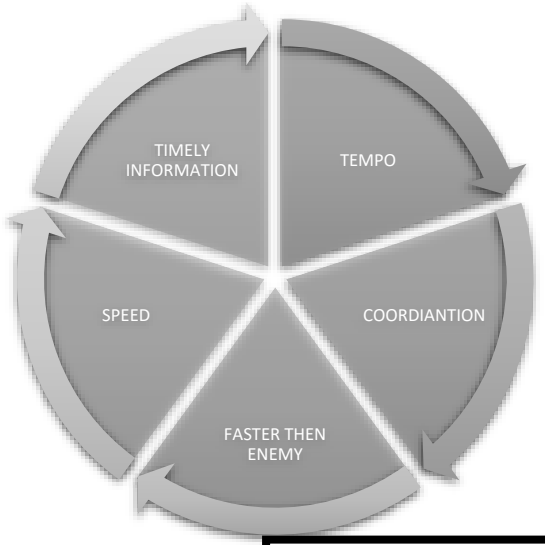
1. Characteristic of current tactical land operations.
2. Military Decision Making Process?
3. Battle Management System, UAV and IA in MDMP.

SPEED IS KEY

Land Tactical Operations

SEIZING INITIATIVE

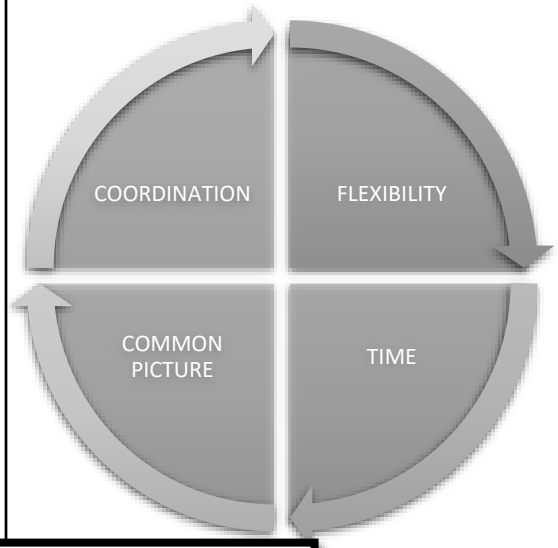
- TEMPO
- SURPRISE
- PRE-EMPTION
- MOMENTUM
- SIMULTANEITY
- EXPLOITATION
- AVOIDING CULMINATION



INITIATIVE IS KEY TO SUCCESS

ATP-3.2.1 – *Conduct Of Land Tactical Operations*

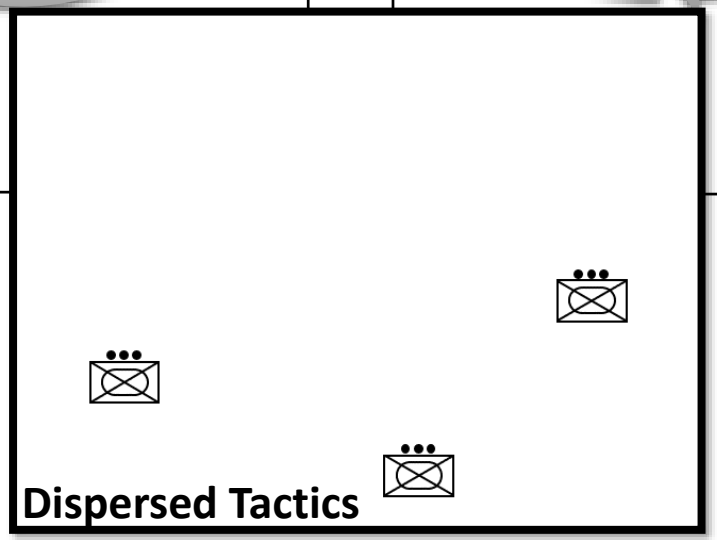
Command and Control



PRINCIPLES OF C2

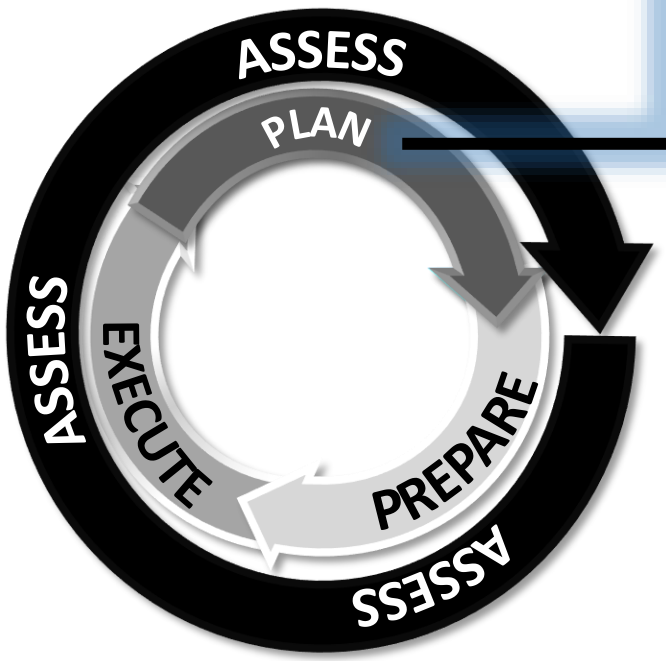
- UNITY OF EFFORT
- DECENTRALIZED EXECUTION
- TRUST
- MUTUAL UNDERSTANDING
- TIMELY & EFFECTIVE DECISIONS AND ACTIONS

ATP-3.2.2 – *Command and Control of Allied Land Forces*



Increased dispersion increases the need for disparate tactical actions to be **synchronized** in time, space, and purpose for their individual outcomes to register as cumulative operational effects.

OPERATIONS PROCESS



MDMP

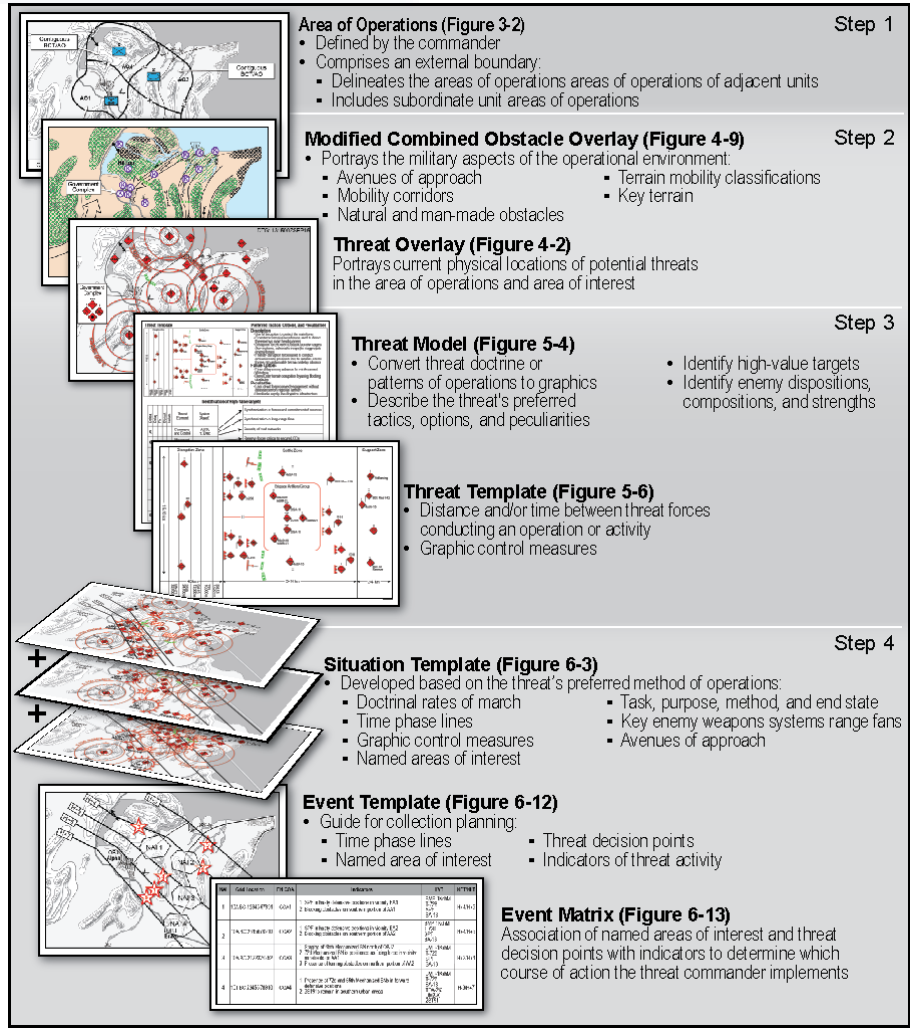
PHASE I UNDERSTANDING THE SITUATION AND PROBLEM
- STEP I: RECEIPT OF MISSION
- STEP II: MISSION ANALYSIS

PHASE II CONSIDER AND DEVELOP COAs*
- STEP III: COA DEVELOPMENT
- STEP IV: COA ANALYSIS
- STEP V: COA COMPARISON

PHASE III COMMUNICATION
- STEP VI: COMMANDER'S DECISION
- STEP VII: ORDER PRODUCTION, DISSEMINATION AND TRANSITION

APP-28
Tactical planning for land forces

IPB



Area of Operations (Figure 3-2) — Step 1
- Defined by the commander
- Comprises an external boundary:
  - Delineates the areas of operations areas of operations of adjacent units
  - Includes subordinate unit areas of operations

Modified Combined Obstacle Overlay (Figure 4-9) — Step 2
- Portrays the military aspects of the operational environment:
  - Avenues of approach
  - Mobility corridors
  - Natural and man-made obstacles
  - Terrain mobility classifications
  - Key terrain

Threat Overlay (Figure 4-2)
Portrays current physical locations of potential threats in the area of operations and area of interest

Step 3

Threat Model (Figure 5-4)
- Convert threat doctrine or patterns of operations to graphics
- Describe the threat's preferred tactics, options, and peculiarities
- Identify high-value targets
- Identify enemy dispositions, compositions, and strengths

Threat Template (Figure 5-6)
- Distance and/or time between threat forces conducting an operation or activity
- Graphic control measures

Step 4

Situation Template (Figure 6-3)
- Developed based on the threat's preferred method of operations:
  - Doctrinal rates of march
  - Time phase lines
  - Graphic control measures
  - Named areas of interest
  - Task, purpose, method, and end state
  - Key enemy weapons systems range fans
  - Avenues of approach

Event Template (Figure 6-12)
- Guide for collection planning:
  - Time phase lines
  - Named area of interest
  - Threat decision points
  - Indicators of threat activity

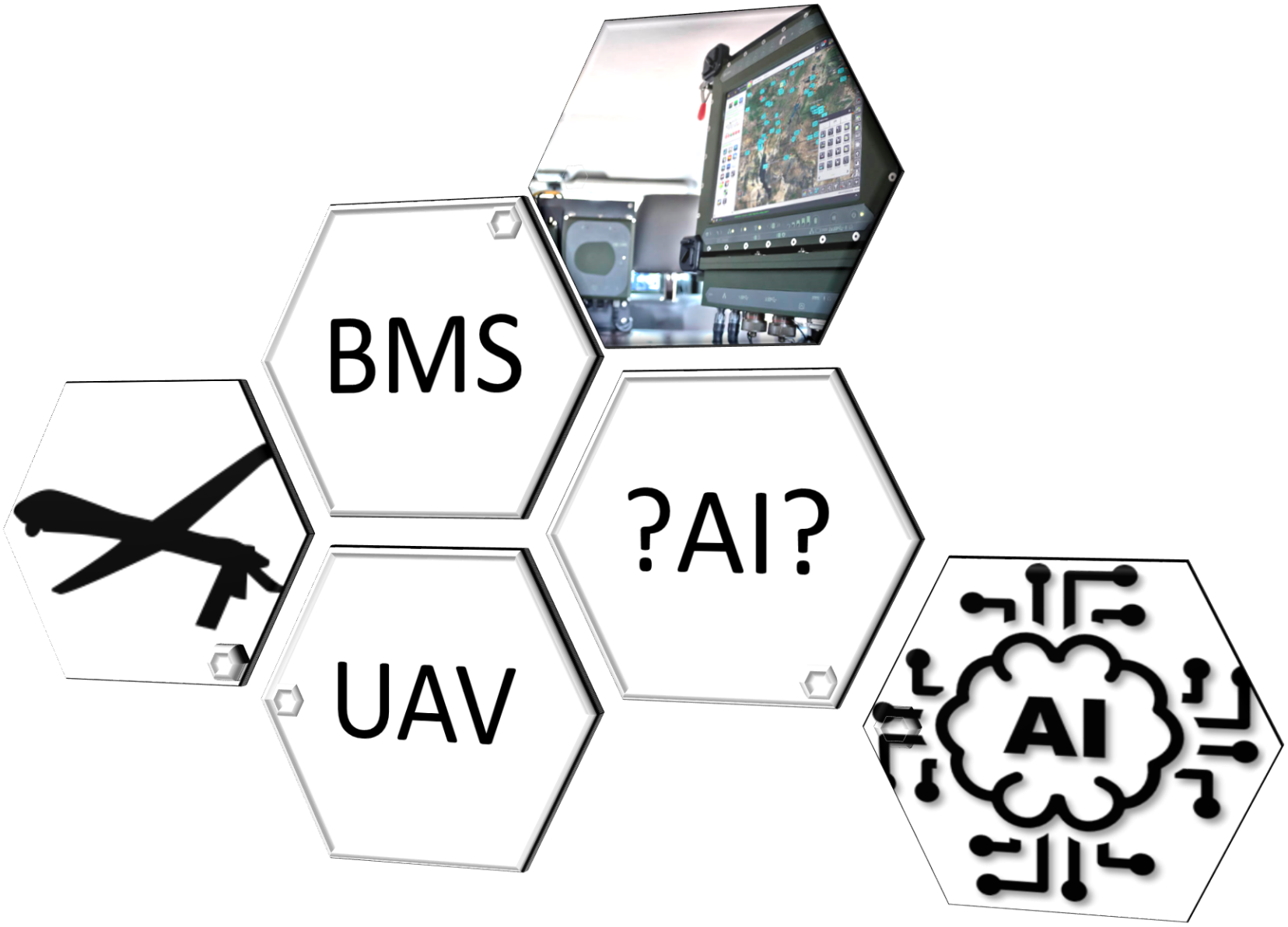
Event Matrix (Figure 6-13)
Association of named areas of interest and threat decision points with indicators to determine which course of action the threat commander implements

GOLDEN RULE OF PLANNING OPERATIONS

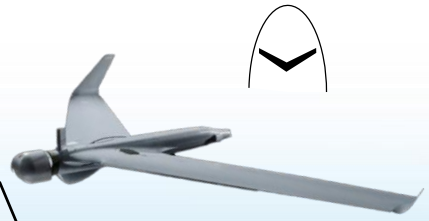
1/3 FOR COM

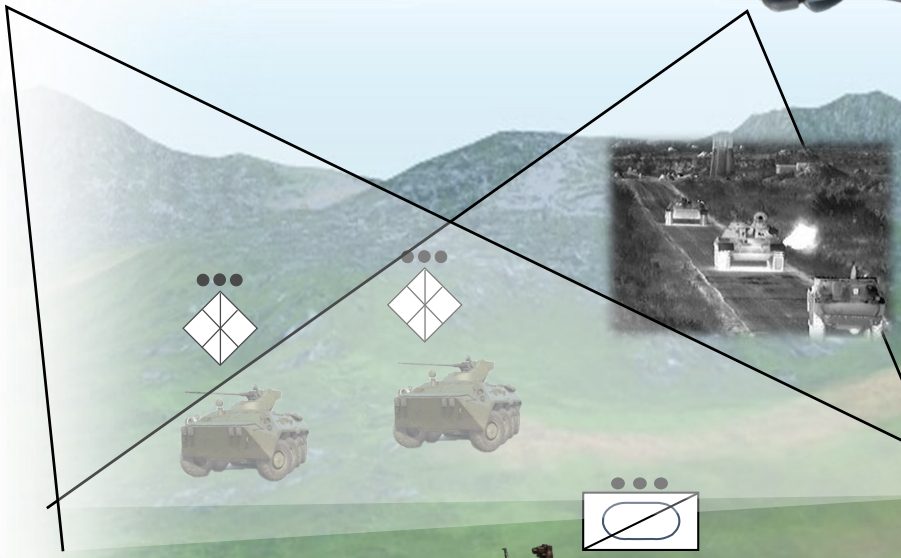
2/3 FOR SUBORDINATES

** COA – Course of action*


BMS
?AI?
UAV
AI

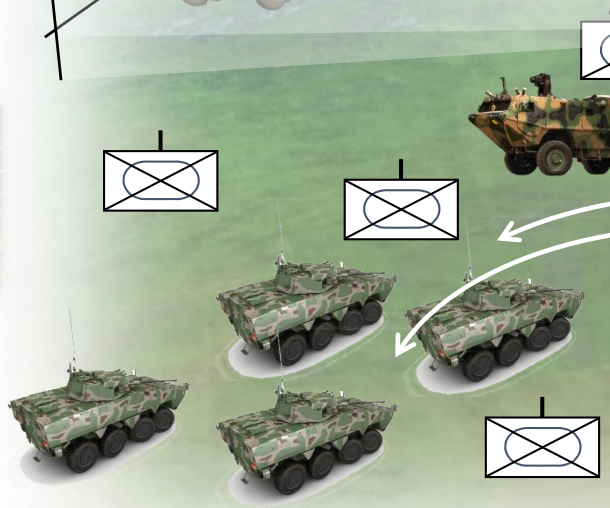
BMS





COMMON OPERATIONAL PICTURE

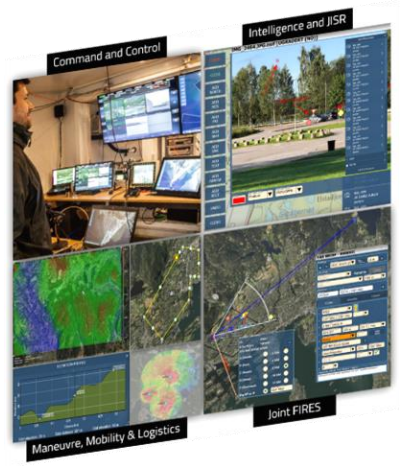
SITUATIONAL AWARENESS



BLUE FORCE TRACKING

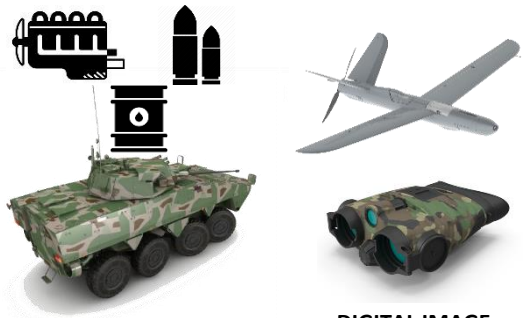
COMMAND, COMMUNICATION & CONTROL

HEADQUARTERS MANAGEMENT SYSTEM FOR CORPS, DIVISION, BRIGADE & REGIMENT



COMMON OPERATIONAL PICTURE

COOPERATION OF THE BMS WITH SENSORS AND EFFECTORS



STATUS OF EQUIPMENT

DIGITAL IMAGE

BMS

DISMOUNTED SOLDIER SYSTEM
JOINT FIRES SUPPORT SYSTEM

HEADQUARTERS MANAGEMENT SYSTEM FOR BATTALION, COMPANY, PLATOON AND SQUAD

PHASE I UNDERSTANDING THE SITUATION AND PROBLEM

STEP I: RECEIPT OF MISSION

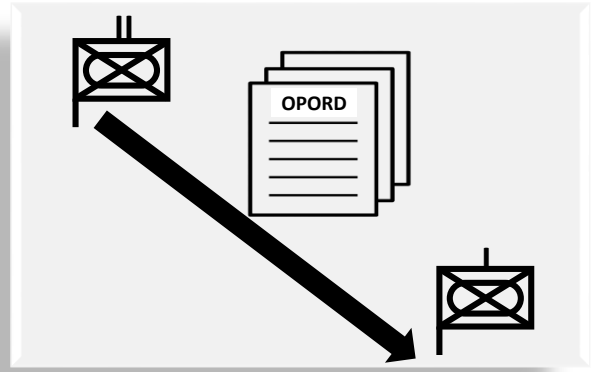
Source: Marcin/12BZ

VERBALLY („FACE TO FACE")

− TIME-CONSUMING

− CONCENTRATION OF CRUCIAL PERSONNEL IN ONE PLACE

\+ MISSION MUCH MORE UNDERSTOOD



IN WRITTEN FORM (DELIVERED BY LNOs)

− TIME-CONSUMING

− POSSIBILITY OF THE MESSAGE BEING INTERCEPTED BY THE OPPONENT

Source: Michał ZIELIŃSKI / Polska Zbrojna

WITH USE OF RADIO

− POSSIBILITY OF THE MESSAGE BEING INTERCEPTED BY THE OPPONENT

− INABILITY TO TRANSMIT A COMPLEX ORDER (ONLY SHORT FRAGO, WNGO)

\+ NO NEED TO TO CENCENTRATE COMMANDER IN ONE PLACE

Source: TELDAT Sp. z o.o.

WITH USE OF ICT (Information and Communications Technology)

\+ RAPID DELIVERY OF MISSION (OPORD, WNGO, FRAGO)

\+ NO NEED TO TO CENCENTRATE COMMANDERS IN ONE PLACE

NOTE! COMMANDERS COULD COMBINE METHODS (SUBORDINATES COULD BE ACQUIANTED WITH MISSION THROUGH ICT AND COM COULD BRING THEM TOGETHER ONLY FOR CONFIRMATION BRIEF

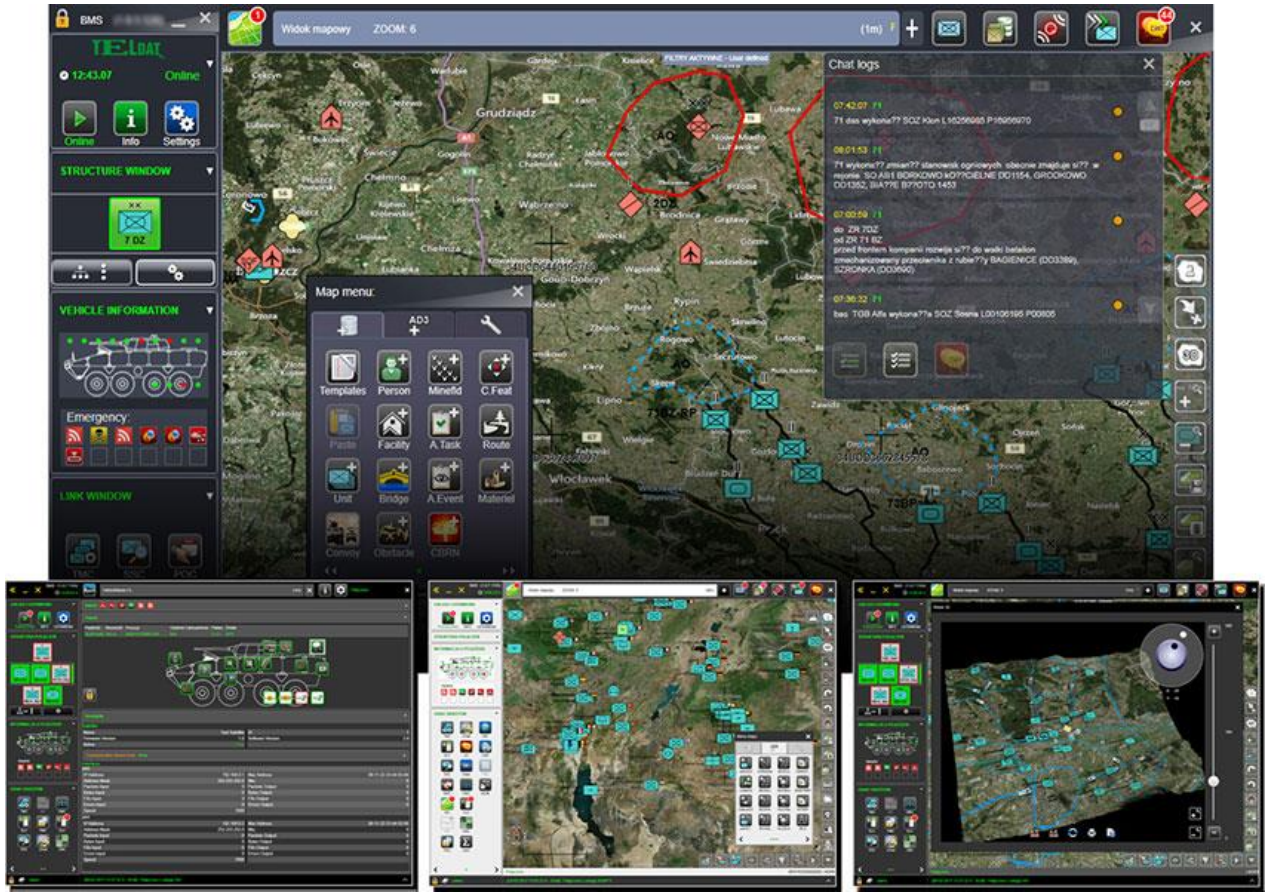
PHASE I UNDERSTANDING THE SITUATION AND PROBLEM

STEP I: RECEIPT OF MISSION

STEP II: MISSION ANALYSIS

UAS and BMS in TERRAIN ANALYSIS

BMS – ANALYSIS OF TERRAIN



- analysis of **terrain situation**, also using **3D visualization**
- quick access to **maps every scale and type** (satellite, topo, terrain)
- **analysis and visualization of Fresnel zones** (areas of the radio signal) using elevation data, allowing relative location of antennas
- **application of vector topographic underlays and raster topographic underlays**

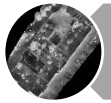
PHASE I UNDERSTANDING THE SITUATION AND PROBLEM

STEP I: RECEIPT OF MISSION

STEP II: MISSION ANALYSIS

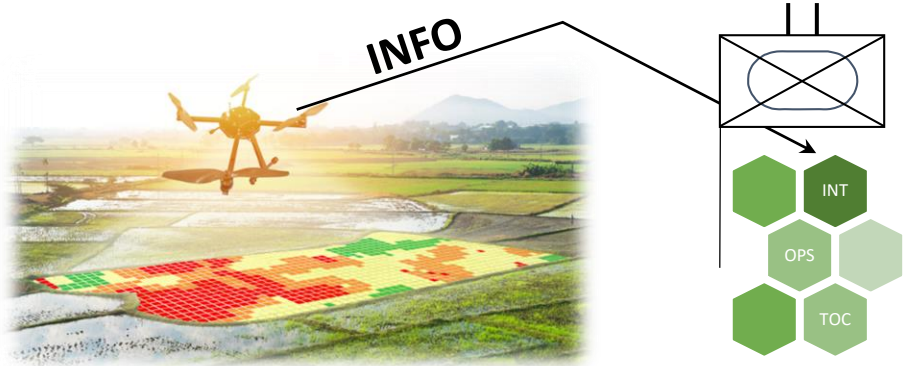
UAS IN ANALYSIS OF TERRAIN & ENY


ELECTRO-OPTICAL


INFRARED


2D MAPPING

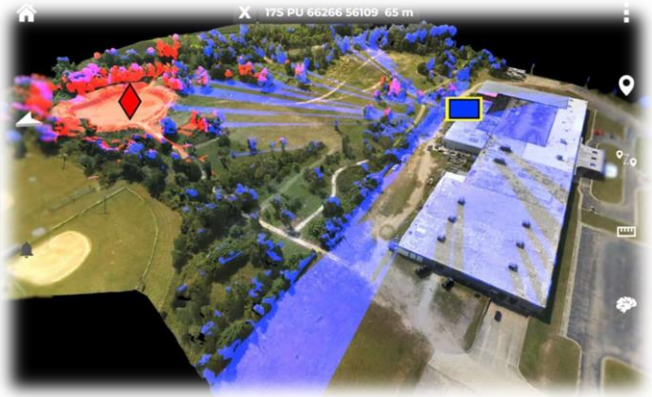

3D MAPPING



ADVANTAGES	DISADVANTAGES
• SAFE HUMAN RESOURCES	• SOME CONSTRAINTS WITH USE IN SEVERE WEATHER CONDITIONS
• QUICK INFORMATION DELIVERY	• LIMITED USAGE IN HIGH SATURATION OF ENY EW ASSETS.
• MORE DETAILED INFORMATION THAN ORDINARY MAP ESPECIALLY IN CLOSE TERRAIN (MOUNTAINS, FORESTS, BUILT-UP AREAS)	

RQ-35 Heidrun

REAL-TIME 2D/3D MAPPING



LINE OF SIGHT ANALYSIS

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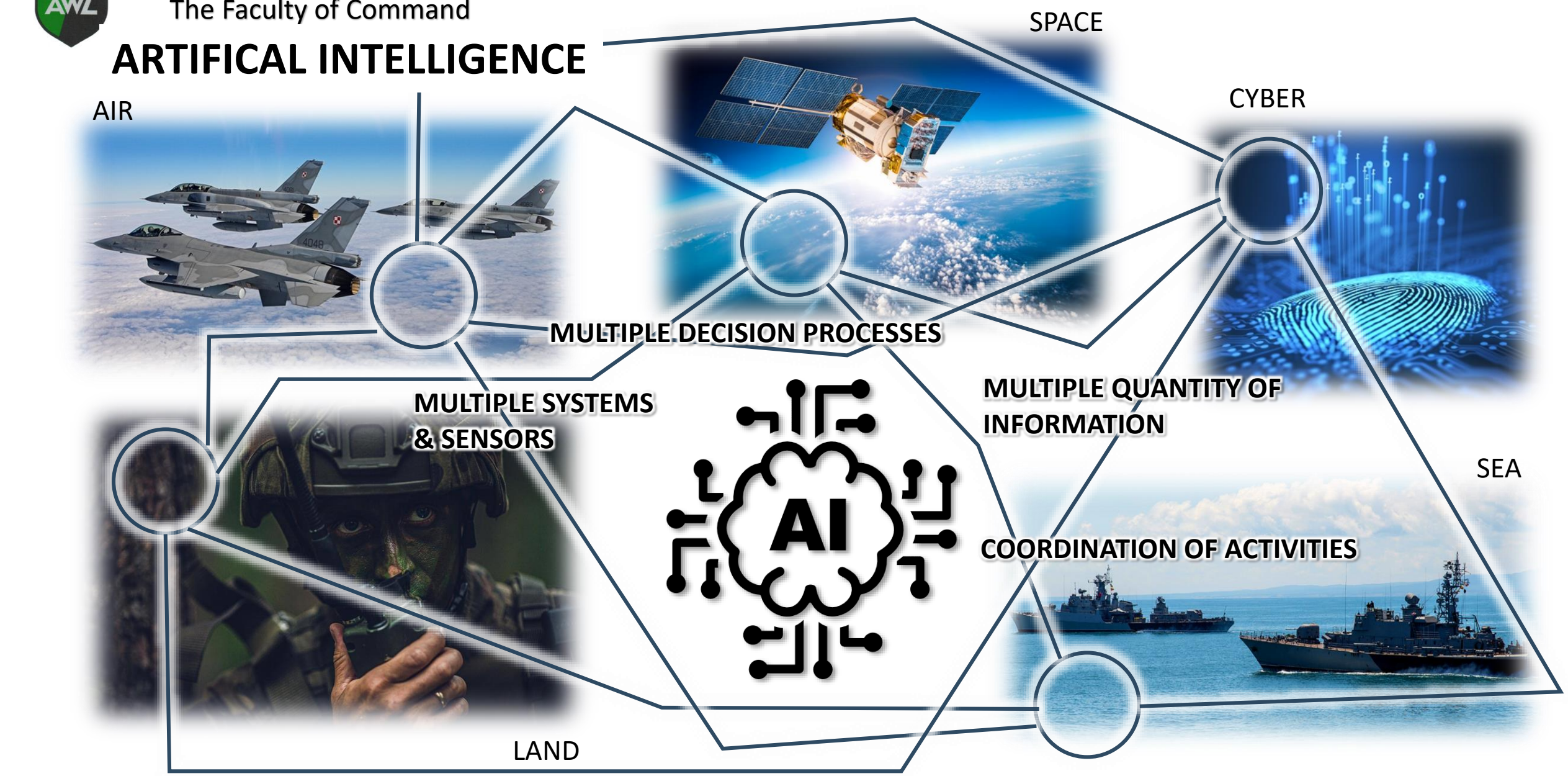
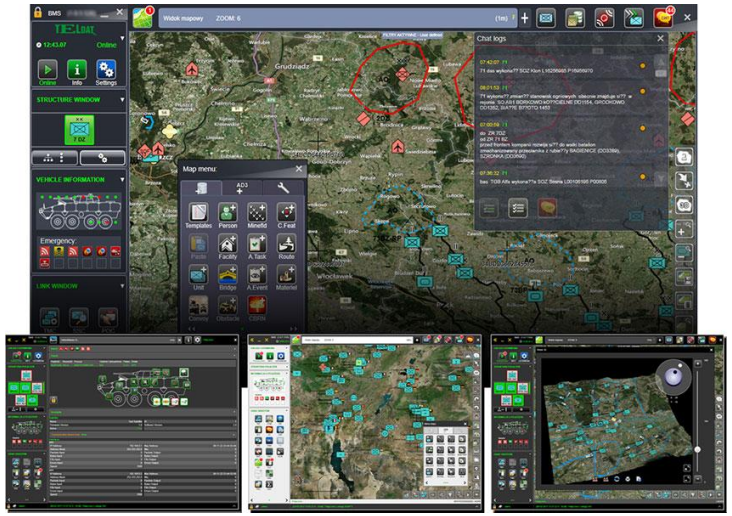
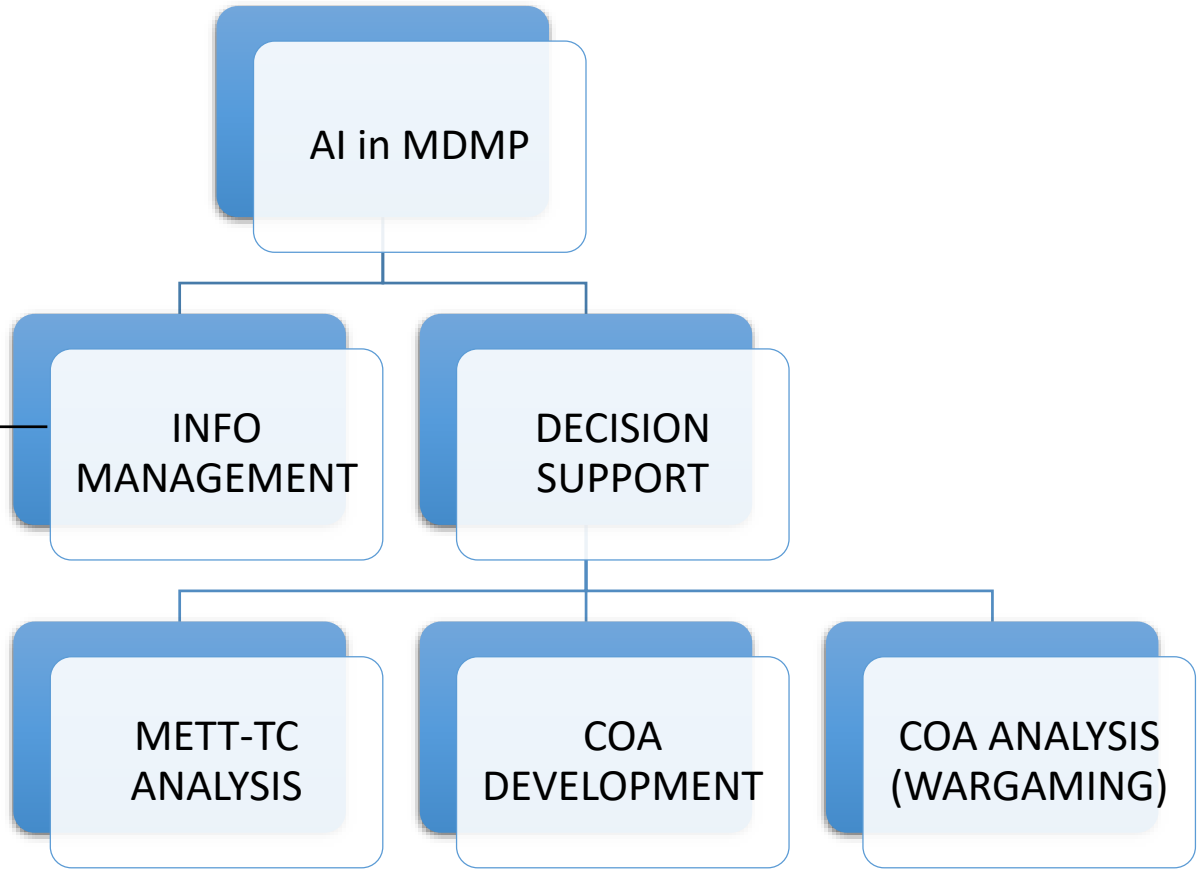
ARTIFICAL INTELLIGENCE



TOOL TO SUPPORT THE STAFF AND COMMANDER

COMMON OPERATIONAL PICTURE





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INFO MANAGEMENT

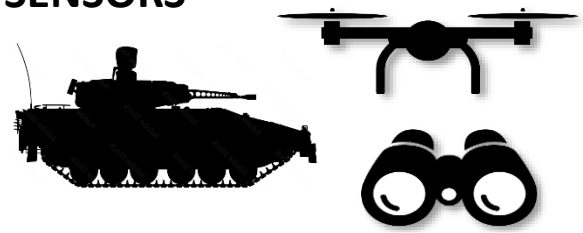
SUBORDINATES NEIGHBOURS HIGHER HQ COM

REPORT

INFO

OPORD

SENSORS



AI

INFO CELL

INFO INT CELL

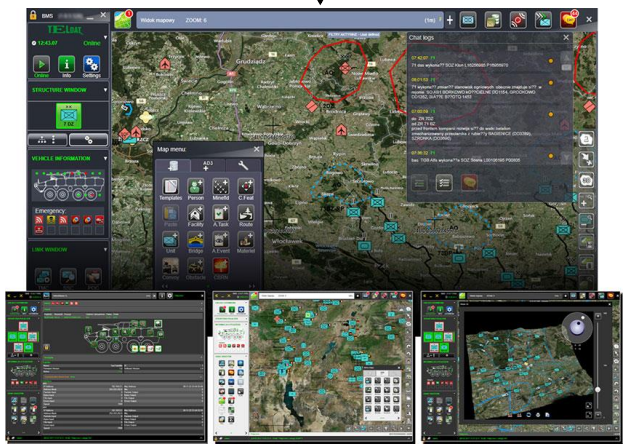
INFO PLANS CELL

INFO OPS CELL

INFO CS CELL

INFO CSS CELL

COMMAND POST



COMMON OPERATIONAL PICTURE

MDMP

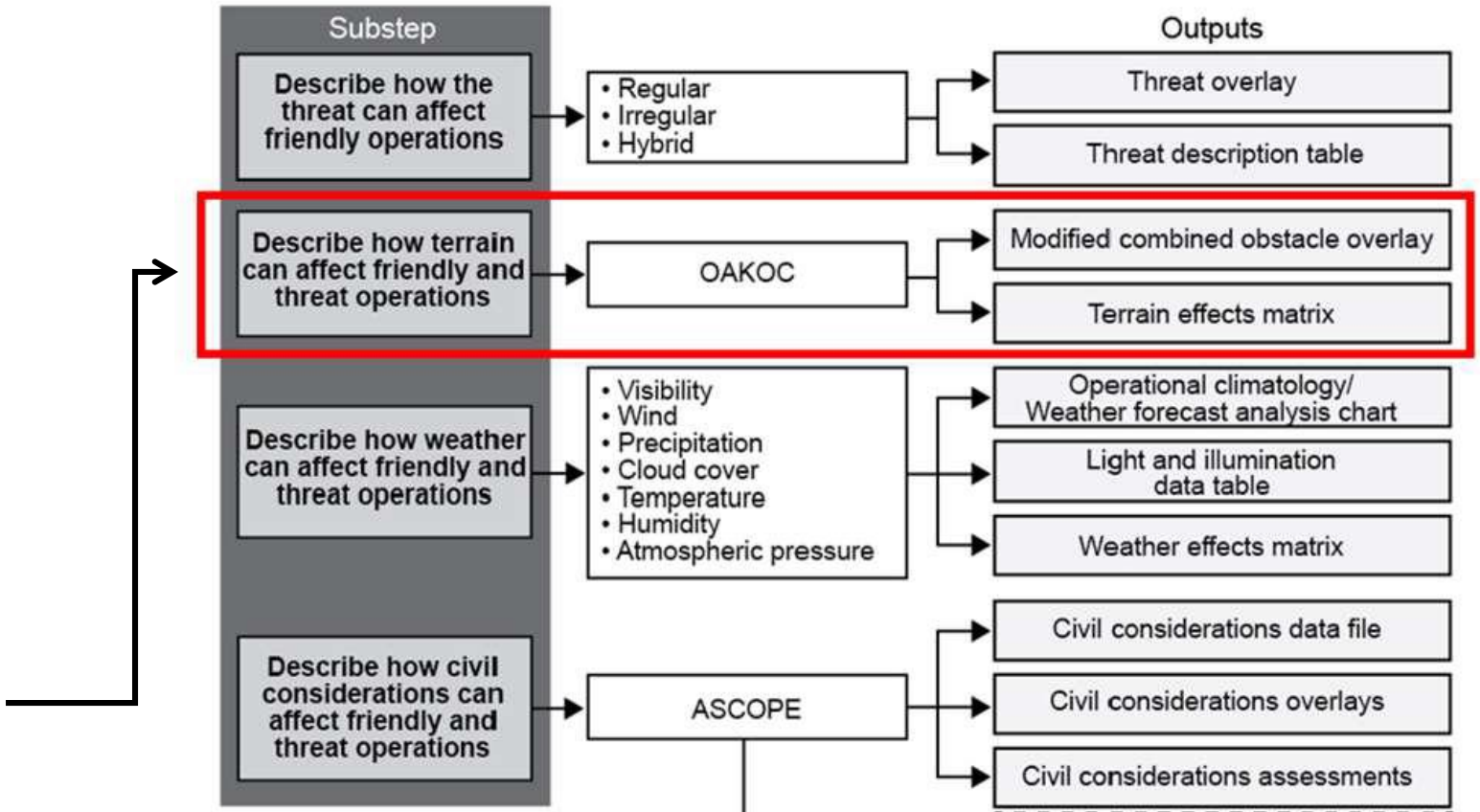
PHASE I UNDERSTANDING THE SITUATION AND PROBLEM

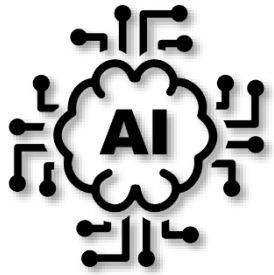
STEP I: RECEIPT OF MISSION

STEP II: MISSION ANALYSIS

IPB

1. Define the Operational Environment.
2. Describe environmental effects on operations
3. Evaluate the threat
4. Determine threat Courses Of Action (COAs).





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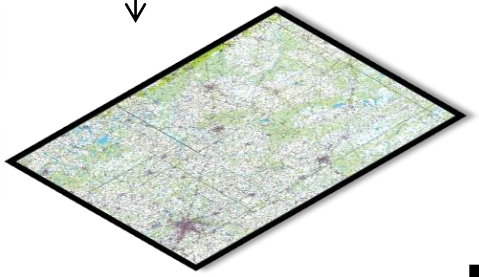
DATA SOURCE

AI

- INTERNET OPEN SOURCE
- MAPPING TERRAIN DRONES
- COLLECTED (GEO) DATA SOURCES
- SATELLITE IMAGERY



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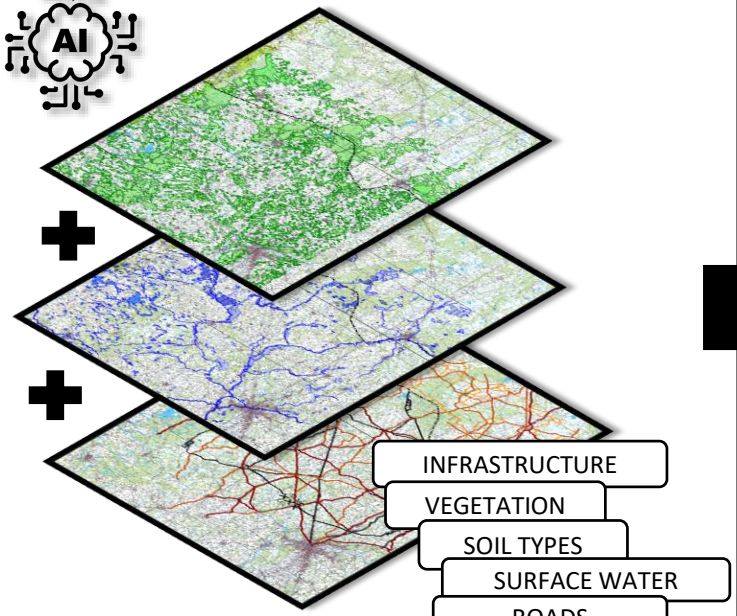
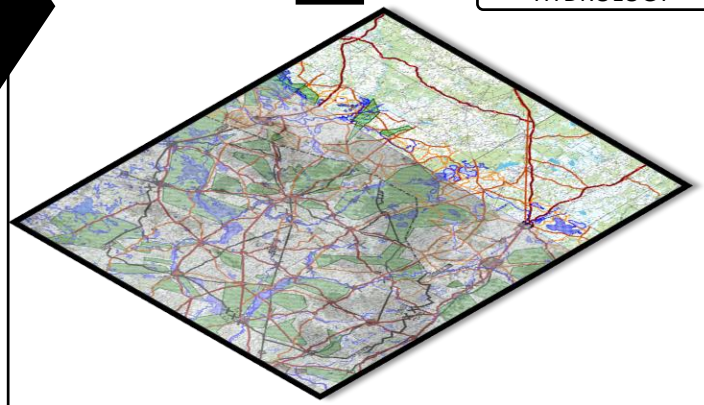
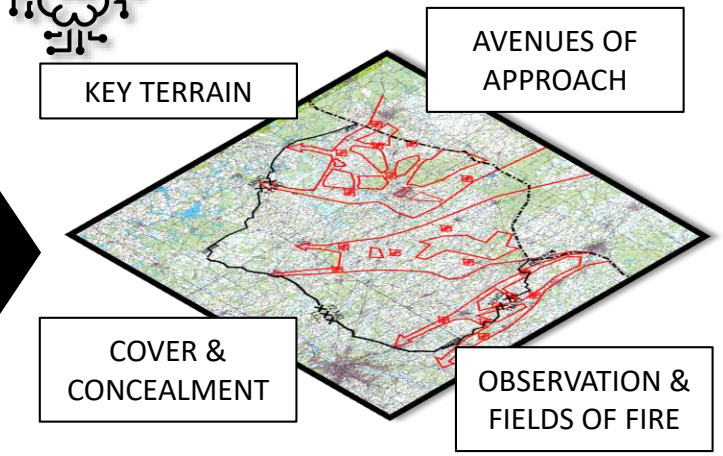




COMBINED OBSTACLE OVERLAY

AI



MODIFIED COMBINED OBSTACLE OVERLAY

- VITAL GROUND
- KEY TERRAIN
- ENGAGEMENT AREA
- FIRE SACKS
- ASSEMBLY AREAS
- ATTACK BY FIRE POSITIONS
- INDIRECT FIRE POSITIONS

RECOMMENDATIONS

MDMP

PHASE I UNDERSTANDING THE SITUATION AND PROBLEM

STEP I: RECEIPT OF MISSION

STEP II: MISSION ANALYSIS ← IPB

MISSION

PURPOSE

END STATE

TERRAIN & WEATHER

TIME

OWN TROOPS

ENEMY

+

DATA BASE

- TACTICAL DOCTRINE ESTIMATES
- MOEs
- TACTICAL-TECHNICAL EQUIPMENT DATA

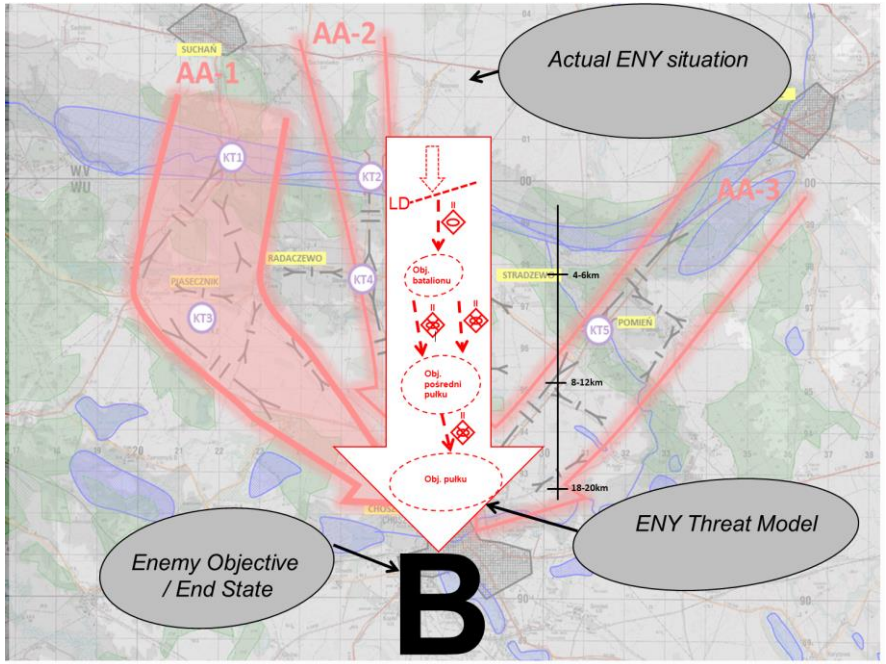
PHASE II CONSIDER AND DEVELOP COAs*

STEP III: COA DEVELOPMENT

STEP IV: COA ANALYSIS

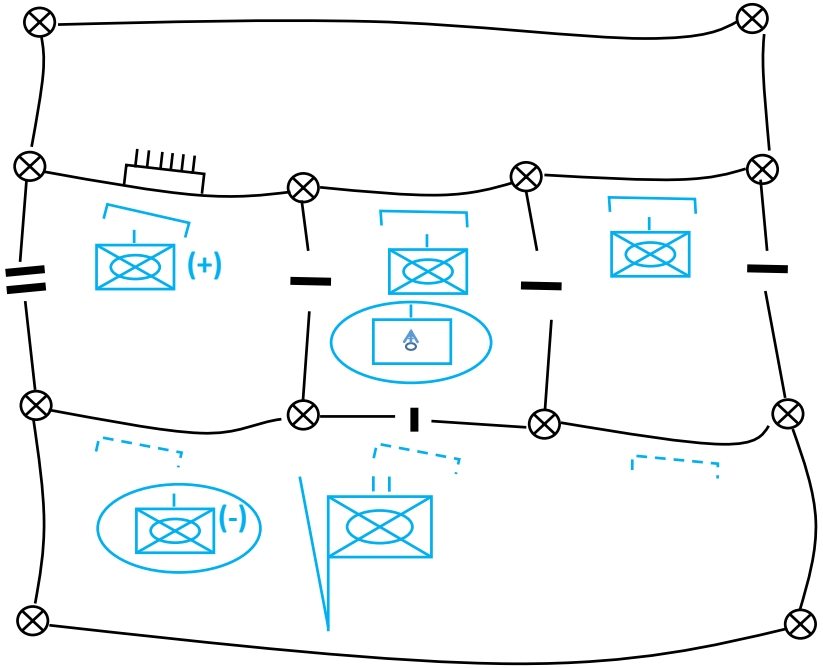
STEP V: COA COMPARISON

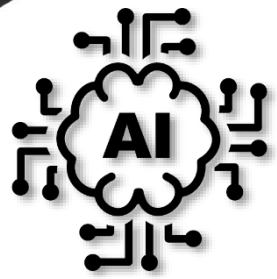
ENY COA



AI

OWN COA





SUMMARY

- AI WILL NOT REPLACE HUMANS IN DECISION-MAKING, BUT IT CAN **SUPPORT** THE COMMANDER
- AI WILL NOT PERFORM ALL DECISION-MAKING AND RELATED ACTIVITIES ANYTIME SOON
- AI CAN BE USED IN ANALYSIS, PLANNING AND EXECUTION OF TASKS
- IN MY OPINION, THE USE OF AI IN THE DECISION-MAKING PROCESS WILL NOT BE AIMED AT MAKING BETTER DECISIONS THAN WITHOUT AI, BUT WILL BE INTENDED TO SPEED UP CERTAIN ACTIVITIES THAT ARE TIME-CONSUMING, SUCH AS TERRAIN ANALYSIS OR CONSIDERING COURSES OF ACTIONS (USING THE WAR-GAMING METHOD).
- AI SOFTWARE SHOULD BE LINKED TO THE BATTLEFILED MANAGEMENT SYSTEM IN SUCH A WAY THAT THE EFFECTS OF THE STAFF'S WORK WITH THE SUPPORT OF ARTIFICIAL INTELLIGENCE CAN BE QUICKLY VISUALIZED AND IMPLEMENTED.

Thank You